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Uniform Chemical Labeling Law Proposed

The American Medical Association's Board of Trustees has authorized a first step toward protecting the public from potentially dangerous household and commercial chemicals.

The Board authorized the American Medical Association committee on toxicology to draft a recommended "model" law on labeling of many possible harmful chemicals not now regulated.

It would serve as a guide for writing regulations which would require labels to show such information as the product's content, its possible dangers, directions for safe use, and first aid instructions.

Products involved include auto care and repair materials, paints and paint removers, putty, soldering fluids, household cleansers and polishers, heating and cooking fuels, laundering items, art supplies, and toys containing chemicals.

The committee's secretary, Bernard E. Conley, estimates there are at least a quarter of a million different trade-name substances now on the market. Without proper labeling, physicians and the public cannot possibly know what harmful material they may contain or how to treat poisoning from them.

The proposed law is intended to reduce careless and ignorant handling and storage of chemicals in the home, in small businesses and in other areas where control of exposure to the chemicals is not as efficient as it is in the manufacturing process, Conley said.

The law should be an "enabling act" under which later regulations could spell out necessary details for enforcement and compliance, according to Dr. Torald Sollmann, Cleveland, committee chairman. The legislation should be flexible and not readily out of date.

The American Medical Association committee plans to consult other organizations and individuals who are interested in the problem. These include the American Academy of Pediatrics, American Public Health Association, American Pharmaceutical Association, National Safety Council, leading trade associations, and various state and national government regulatory agencies.

Legislator Discusses Jobs for Over-40 Persons

Scientific research has made it possible for life "to begin at 40" but industrial employment practices are standing in the way for many people, a New York legislator said recently.

Americans are healthier and live longer than ever before, but it does not do them much good if they cannot get jobs, according to Senator Thomas C. Desmond, chairman of the New York joint legislative committee on problems of the aging.

Unfortunately, job discrimination against persons over 40 is widespread, especially in large companies with inflexible hiring policies. The "tragic paradox" is that forced unemployment among over-40 persons occurs in a period of otherwise full employment and prosperity.

While laws forbidding discrimination on the basis of age would not give older workers preference, they would at least give them an equal chance for obtaining jobs. However, until such legislation is passed. other methods of helping older persons must be used, Senator Desmond said in a recent issue of *Today's Health*, published by the American Medical Association.

Wider use of medical knowledge of older persons' capabilities could make hiring policies more realistic —and more profitable, he said. At least one large company has profitably used a work capacity and physical capacity chart to match workers to jobs.

A broad educational program would change management's stereotyped idea that older workers are crabby, cannot take supervision, cannot learn and lack ambition. Many of the weaknesses commonly attributed to older workers are due to a few outstanding cases or to a serious situation caused by ineffective supervision, he said.

Special counseling and placement services for older workers are needed in every public employment office, in addition to retraining centers for workers who have become "rusty" or who have no skills. The best results are obtained when these courses are operated on an intensive, practical basis, geared to the local labor market. Senator Desmond said.

Sheltered workshops give jobs to physically handicapped people who want and need work but who can work only at a slower pace, with special equipment or only with special transportation. He noted that successful shops in New York communities are said to have reduced periods of invalidism as well as public welfare rolls.

Local committees on aging, sponsored by civic, business, religious, medical and other groups can help arouse communities to the needs of older workers and help develop practical programs for hiring older persons.

Forty-Plus Clubs, which function as a contact between over-40 individuals and prospective employers, have been successful in some cities in matching men over 40 to jobs requiring their education and experience.

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Cheese Called Readily Digestible Food

Research has shown that no food is more readily digestible than cheese, provided it is eaten slowly with crackers or bread and in moderation.

Most indigestion due to cheese is caused by eating too much or too quickly, according to an article in a recent issue of *Today's Health*, published by the American Medical Association.

While there is evidence that overcooking makes some cheese rubbery and harder to digest, cooking does not destroy the food value of cheese and sometimes makes it more agreeable to persons who dislike the taste of raw cheese.

Cheese is one of the oldest foods known; the first written mention of it occurred about 1400 B.C. Its basic principle of manufacture—the curdling of fresh milk with rennet—has remained unaltered to this day, while tastes and fashions in cheese constantly change, David Gunston, Denmead, Hampshire, England, said.

For instance, soft and green cheese were the favorites in medieval times. The pungent, slightly sour smell of Limburger is not generally appreciated by Americans, although it is very popular in Europe, he said.

(Continued on Page 28)

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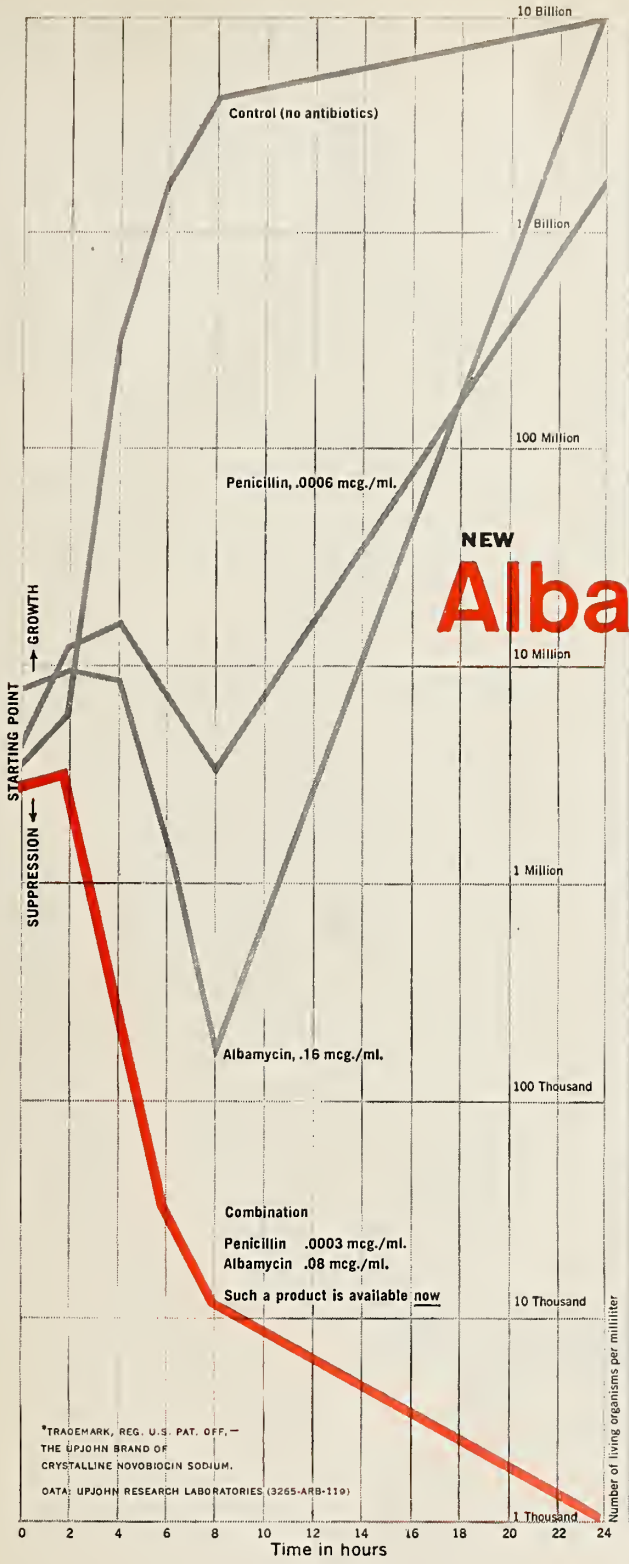

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Surgeons Evaluate Results of 120 Heart Operations

Two Denver surgeons recently said they believe that most if not all future heart operations could be performed with superior results while the patient is "frozen."

They based their observation on the results of 120 operations they have performed for various types of heart defects. All the operations were done while the patient was under hypothermia—in which the body temperature is lowered to a point where life continues but all bodily functions, including heart beat and blood flow, are greatly slowed.

Hypothermia allows surgery to be performed on an open heart with a "dry field" and direct vision, long the goal of cardiac surgery, according to Drs. Henry Swan and S. Gilbert Blount, Jr.

The results are better when the heart is open and can be seen by the surgeon than in the current blind methods guided only by the sense of feel, they said in a recent issue of the *Journal of the American Medical Association.* In addition, direct vision of the heart allows the surgeon to see—and treat—unexpected defects.

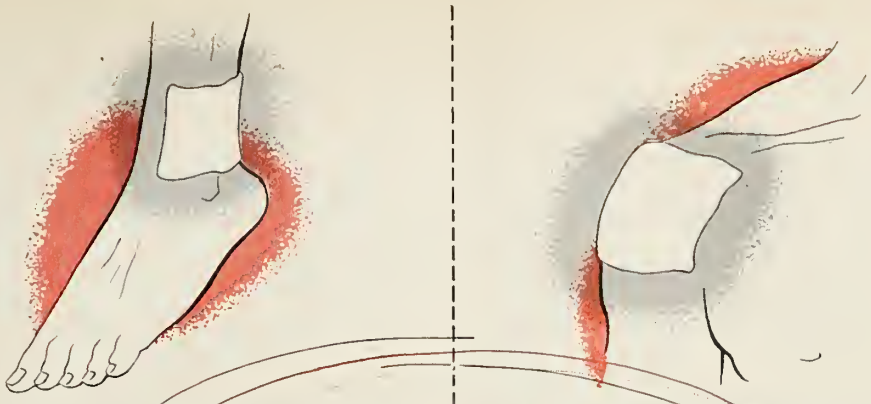
As they performed each operation, the surgeons learned what types of defects can now be treated successfully, as well as some of the limitations of hypothermia. They found that eight minutes is the maximum time during which the blood flow through the heart can safely be stopped. Earlier they believed 10 minutes to be the maximum.

They also found that the safest temperature is between 29 and 32 degrees C. (84.2 and 89.2 degrees F.). Avoidance of lower temperatures largely eliminates two major complications: Abnormal heart beating or failure, and disturbances in blood clotting. Use of fresh blood for transfusions also eliminates clotting difficulties, they said. Of the last 30 patients undergoing surgery only one has died.

The authors found that some defects cannot be repaired within the eight-minute limit. However, they had excellent results with certain narrowings of the entries where arteries lead into the heart, and with defects in the walls between the upper chambers of the heart. The risk of repairing these defects is low, they said.

They pointed out that the probability of the heart safely withstanding surgery can be largely predicted. Except for cases in which the patient's condition prohibits any surgery, the doctors said they will continue to offer operation to desperately ill patients even though everyone involved realizes that the risk is considerable.

The satisfactory results of their operations call for a broader adaptation of open heart techniques to other types of heart defects which at present cannot be repaired within the time limit, the doctors said. They feel that with further experience many of these procedures can be adapted for use with hypothermia.



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Cheese Called Readily Digestible Food

(Continued from Page 14)

The food value of cheese has long been known. The Greeks gave it regularly to their wrestlers, while the Romans and Jews fed it to their armies. Today it is considered an excellent substitute for lean meat or other protein foods, and is especially good for helping nursing and expectant mothers and growing children meet the calcium requirement for proper development of bones and teeth.

One of the greatest values of cheese has been its preservation of the milk nutrients for far longer periods than the liquid itself may be kept, Gunston said. Cheese contains nearly all the fat, casein, calcium, and vitamin A of fresh milk, and a fair proportion of sugars and minerals. One pound of hard cheese is about equivalent to a gallon of milk, while four ounces of hard cheese are equal to a quart of milk.

Cheese consists of the milk nutrients collected into a curd, separated from the watery whey. In most cheese the curd is cured or ripened by the action of harmless molds of bacteria to produce the characteristic flavor. For the hard cheeses the curds are pressed and sometimes cooked. Ripening may take months or even years.

(Continued on Page 30)

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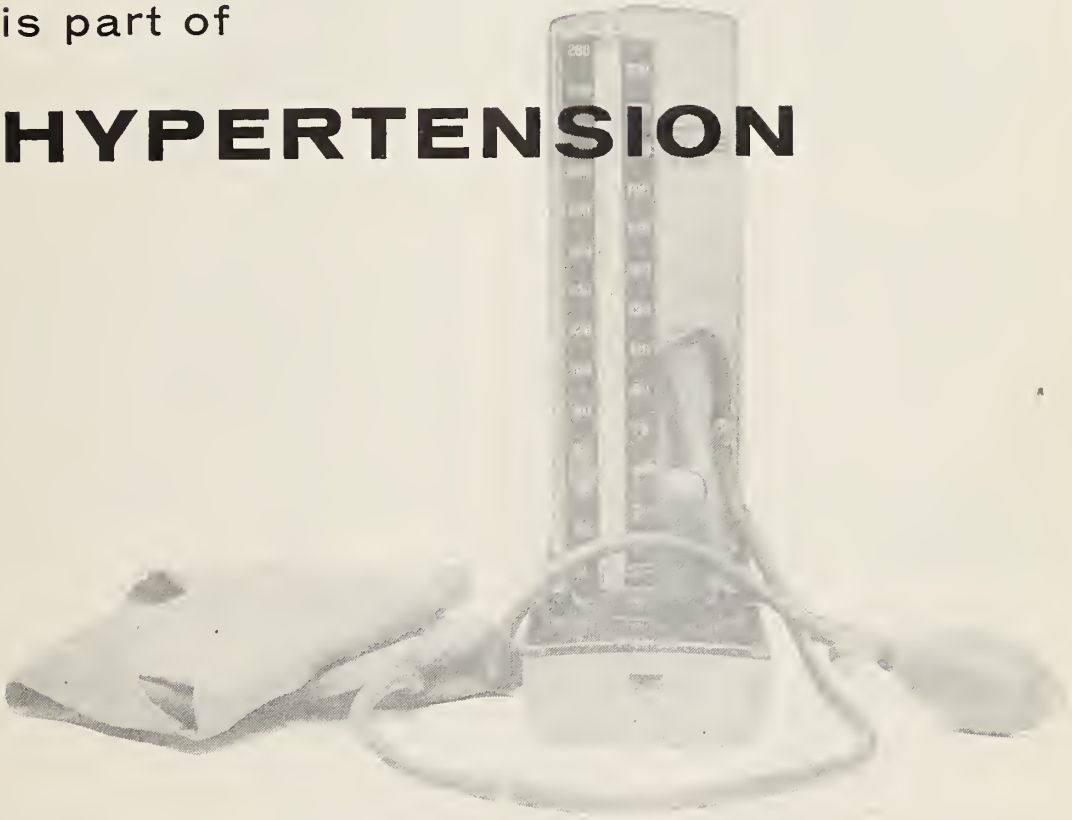

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(Continued from Page 25)

seriously ill patients. In addition, it creates an almost unparalleled feeling of team spirit, they said.

The unit is administered by a committee made up of representatives from the various hospital departments. This committee meets every two weeks to discuss the operation of the unit. This type of administration avoids misunderstandings and provides a means for greater cooperation among those responsible for the patient's care, the authors said.

Cheese Called Readily Digestible Food

(Continued from Page 28)

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American Medical Association Begins Second Phase of Medical Services Survey

Americans who are discharged from hospitals during the third week of this month will be contributing to a massive survey designed to learn what the hospital patient gets for his money, not just what he spends.

The American Medical Association has announced the second phase of a three-part, five-year study measuring the medical services given to the American people by their physicians. The survey, which will have cost about $100,000 when completed, is the first of its kind—measuring services and not money spent.

The results, which will be published late in 1958, may help bring about changes in hospital construction, medical education, health insurance rates, and other health care matters, an editorial in a recent issue of the *Journal of the American Medical Association* said.

Questionnaires have been mailed to some 7,000 hospitals to learn the age, sex, length of stay, and diagnoses for every hospitalized person discharged during the third week of October.

In the first phase conducted in 1953, the American Medical Association bureau of medical economic research determined the age and sex of hospital patients on a given day, and found that men were more hospitalized than women, even though one out of six beds was used for a maternity case. The final phase will be conducted next spring when physicians will contribute information about patients seen in the office and at home.

According to the editorial, the current questionnaire will help answer such questions as: Which ailments or conditions are sending most Americans to hospitals? Which are keeping them there the longest? How many beds are taken up by accident casualties, by pregnant women, by patients undergoing nonemergency surgery?

Future medical education may be influenced by information gained on the operative procedures which seem to be predominant for specific diagnoses and on the number of patients helped by diagnosis of ailments hidden or unsuspected when they were admitted to the hospital. The survey also may help in the designing and locating of new hospitals, the editorial said.

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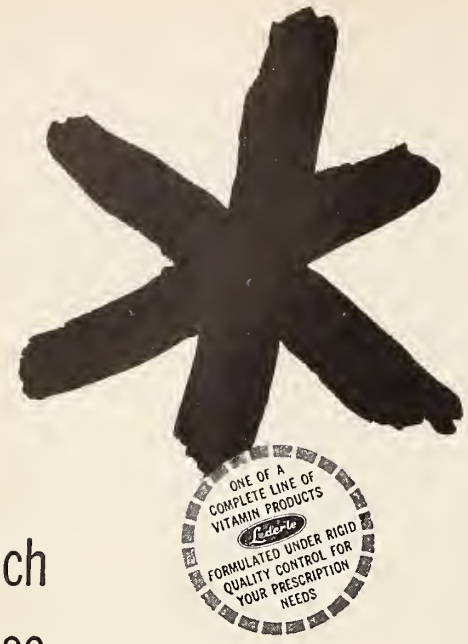

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Infant Eye Disease Related to Length of Time in Oxygen

Premature infants should be given additional oxygen only in emergencies and then for as brief periods of time as possible, three Detroit researchers said recently.

They based their recommendation on a recent study which showed that length of exposure to oxygen is the important factor in producing retrolental fibroplasia, a serious eye disease which may result in blindness. This differs from earlier studies indicating that the concentration of oxygen was the causative factor.

Retrolental fibroplasia was first recognized as a disease of premature infants in 1942 and is now the major cause of blindness among children. Oxygen administration to premature infants was implicated as a possible cause in 1952.

However, because the disease appeared to occur haphazardly and because no information was available on death rates due to curtailing oxygen for premature infants, doctors have been reluctant to change their routine of oxygen administration.

The Detroit researchers now report that restricting oxygen not only lessens the chances of retrolental fibroplasia, but also appears to have no effect on an infant's chances for survival.

The report in a recent issue of *Archives of Ophthalmology*, published by the American Medical Association, is based on a cooperative study made in 18 hospitals between July 1, 1953, and June 30, 1954, in an attempt to clear up questions about oxygen's effect on RLF and mortality rates.

Of the 786 premature infants born in or brought to the 18 hospitals during the year, 586 were followed for at least two and a half months. Fifty-three infants were given oxygen for 28 days, the standard procedure at the time. The other 533 infants were given oxygen only when breathing difficulty occurred.

The study showed that on a percentage basis, twice as many infants in the routine-oxygen group developed the early active stages of the disease as did infants in the curtailed-oxygen group. The rate of progression to the later cicatricial stages which produce permanent damage to the eyes was three and a half times greater in the routine-oxygen group than in the curtailed-oxygen group.

The rate for both active and cicatricial stages increased as the duration of exposure to oxygen increased, but was not affected by the concentration. Rate of withdrawal from oxygen did not appear to play a role, they said.

The incidence was much greater in infants of multiple birth (twins or triplets) than of single birth. The authors said the reason for this is unknown, but it may be related to the degree of oxy-

(Continued on Page 46)

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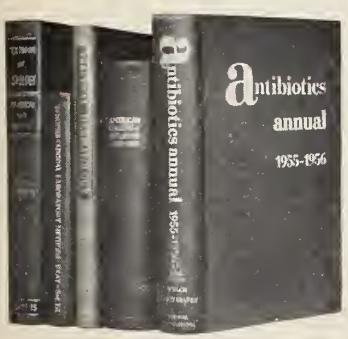

1. Romansky, M.J., et al., Antibiotics Annual 1955-1956, p. 48,
2. Waddington, W. S., Maple, F. C., and Kirby, W. M. M., A.M.A. Archives of Internal Medicine, 1954, p. 556.

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Infant Eye Disease Related to Length of Time in Oxygen

(Continued from Page 42)

gen saturation in the blood. A multiple-birth infant might have less oxygen in his blood before birth than a single-birth baby. When he is given additional oxygen, a relatively greater difference in blood-oxygen saturation before and after birth could result, which might be "a greater insult" to the blood vessels of the eye.

The authors are V. Everett Kinsey, Ph.D., and June Twomey Jacobus, B.A., of the Kresge Eye Institute, Detroit, and F. M. Hemphill, Ph.D., of the School of Public Health, University of Michigan, Ann Arbor.

The cooperative study was supported by grants from the National Institute for Neurological Diseases and Blindness of the U. S. Public Health Service, Bethesda, Md., the National Foundation for Eye Research, Boston, and the National Society for the Prevention of Blindness, New York.

Plan to attend California Rural Health Council—Sacramento (Hotel Senator) January 25-26, 1957.

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References (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* 157:305 (Jan. 22) 1955. (2) Austrian, R.: *New York J. Med.* 55:2475 (Sept. 1) 1955. (3) Murphy, F. D., & Waisbren, B. A., *in* Murphy, F. D.: Medical Emergencies: Diagnosis and Treatment, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (4) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (5) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (6) Kass, E. H.: *Am. J. Med.* 18:764, 1955. (7) Tebrock, H. E., & Young, W. N.: *New York J. Med.* 55:1159 (Apr. 15) 1955.

graph is adapted
n Altemeier, Cul-
son, Sherman, Cole,
un, & Fultz.[1]

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1,573 Women Studying Medicine in U. S.

The American Medical Association reports that during the academic year 1955-56 a total of 1,573 women were studying medicine in the 76 approved four-year medical schools in the United States. This is a 2.3 per cent gain over the previous year.

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FDA Warns Cancer Patients On Hoxsey Treatment

Following action of a federal court at Pittsburgh in denouncing the Hoxsey medicines. the U. S. Food and Drug Administration has warned all cancer patients and their families that the "menace" of the "fake treatment" still continues.

FDA Administrator George P. Larrick said his agency will seek an injunction to stop further interstate shipment of the pills. He said the court action merely means that half a million of the pills, seized shortly after opening of a second Hoxsey clinic at Portage, Pa., will now be destroyed.

Mr. Larrick declared:

"Over the years thousands of persons have been deceived by the false claims for the Hoxsey liquid medicines and pills. At the Pittsburgh trial there was testimony concerning persons who may have died of cancer as a result of reliance on the Hoxsey treatment instead of seeking competent medical treatment in the early stages of their condition. The government's evidence showed that alleged 'cured cases' presented by defense attorneys were people who did not have cancer, or who were adequately treated before they went to the Portage clinic, or died of cancer after they had been treated there."

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"Malingering" Opposed as Diagnostic Term

A Syracuse, N. Y., psychiatrist said recently that malingering—the medical word for "goldbricking"—ought to be thrown out of the doctor's diagnostic dictionary.

Dr. Thomas E. Szasz, professor of psychiatry at the State University of New York, said this word isn't a diagnosis; it's a moral judgment.

He said ordinarily the question does not arise except in military situations, but it does have importance in criminal cases, insurance matters and lawsuits. The use of the word also tells some important things about the way society feels now towards health and illness, delinquency, and criminal behavior.

In fact, Dr. Szasz said, the only reason a doctor is called on to make the diagnosis is because of the universal belief that "everyone is a potential malingerer."

Writing in a recent issue of *Archives of Surgery*, an American Medical Association publication, Dr. Szasz said the dictionary defines malingering as pretending illness in order to avoid duty, and it's generally considered as a kind of "cheating" in "the game of life." The rules of the game allow the players to use some ways of avoiding duty—such as entering a draft-exempt job to avoid military service—but pretending to be ill is not one of them.

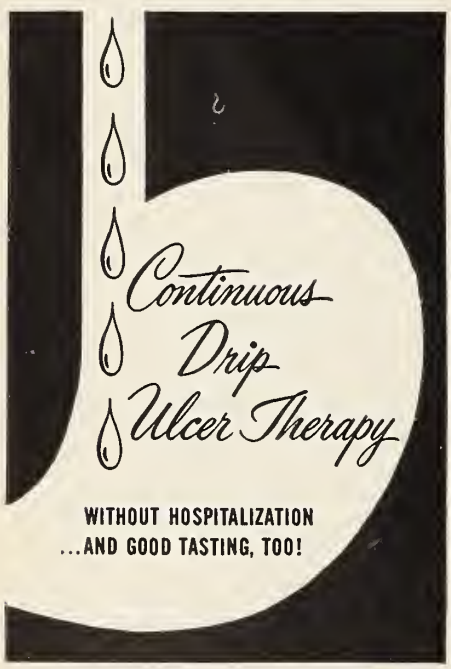
In fact, Dr. Szasz said, aches and pains not directly connected with some physical cause—what physicians call psychosomatic illness—are currently the most "disreputable" symptoms anyone can have.

This is why the man who takes a draft-exempt job is not considered a goldbricker, but the man who complains of severe headache is. For the same reason a man who commits murder and is diagnosed as a schizophrenic is not considered a malingerer, because schizophrenia is an acceptable medical diagnosis. But the man who commits murder and pretends to be schizophrenic is called a malingerer. (Unfortunately, many physicians cannot agree whether a person who does this is sick or not. Some physicians think that a man who pretends to be insane must be a bit insane in the first place, he said.)

Actually, some people tend to think of all criminal behavior as malingering—or cheating in the game of life. Not many years ago all psychiatric illness was considered this way. This means that the rules of the game may change—but the physician who makes a diagnosis of malingering puts himself in the position of approving the rules and applying them as they are at the time.

This is why the word is no good as a medical diagnosis. All it tells us is that the doctor believes in the rules and thinks the patient has broken them. It does not really tell us anything about the patient's

(Continued on Page 62)



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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. *22*:67 (Mar.) 1955.

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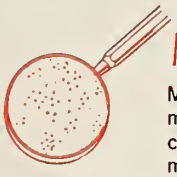

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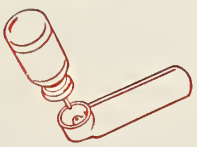

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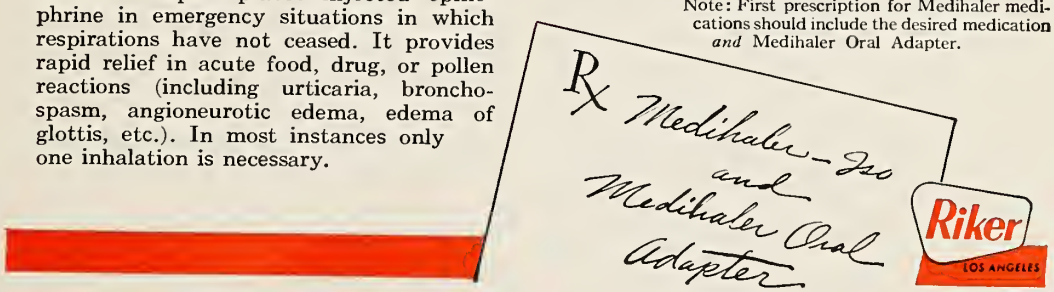

"Malingering" Opposed as Diagnostic Term

(Continued from Page 58)

condition. It makes the doctor an "umpire" in the game, Dr. Szasz said.

He explained that an umpire in sports assumes all the players are out to win—fairly or otherwise—and he must watch to make sure no one cheats. Since society assumes the same situation exists in daily life, it expects the physician, as umpire, to see that no one uses sickness as a way of cheating.

The "umpire duty" expected of physicians is even more complicated in military service, he said. The doctor has to perform his duty to the service—which means upholding the rules against avoiding duty. If he was drafted himself, he may feel sympathetic toward patients suspected of malingering—which makes him a good doctor but not much of an officer. If he accepts the rules and is a good officer, he is not much help to his patient.

Dr. Szasz says all this makes it impossible to be fair and impartial in such situations.

Another problem is deciding what duty actually is. Most people agree that a man who pretends to be sick to avoid military service is cheating—and shirking his duty. But a man might also pretend to be well in order to get into military service and escape duties at home or at work. The same thing happens in the case of a man who pretends to be well in order to get life insurance. Most people do not consider this as goldbricking.

What all these things add up to is that the doctor who is expected to make a diagnosis of malingering is put in the place of a moral judge. He is not making a diagnosis in the usual sense; that is, of telling a patient what is wrong with him and indicating what can be done about it. He's not telling the patient that he's sick or well—he's simply telling him that being sick or well is wrong or right.

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Cutaneous Tumors of Children

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• Nevi are the most common tumors of childhood. Pigmented nevi are classified into blue nevi, intraepidermal nevi, junction nevi, intradermal nevi (or common mole) and combination types. Cutaneous malignant disease in children is rare. Malignant melanoma is rare before puberty. Wholesale removal of benign pigmented nevi in children should be condemned. However, junction nevi located on the palms, soles, genitalia or waistline—that is, in areas subject to frequent trauma—should be excised.

Hemangiomas in infants are the most common tumors for which advice is sought. Not all hemangiomas regress spontaneously, and on occasion the persistence or progression of such a lesion may bring about life-long unsightly deformities. Therapy for this type of tumor is simple when given early in life. Hemangiomas involving the ears, nose, lips or eyelids should be treated at once, preferably within a month of the time they appear.

THE MOST COMMON skin tumors of childhood are nevi, warts and keloids. The recognition and treatment of verrucae are familiar to all of us. Keloids are mentioned because of their frequent occurrence, and also because there have been numerous reports of squamous cell carcinoma developing in scars subsequent to burns. Malignant change usually does not appear until 20 to 30 years after the formation of the scar, and often in association with some additional injury. For practical purposes, however, the ordinary keloid should be considered benign. Irradiation during the first few months of their development is the treatment of choice for keloids; for old lesions, excision followed by roentgen therapy. Solid carbon dioxide is also often effective.

Hemangiomas

Hemangiomas[17] are probably the tumors for which treatment most frequently is sought. There are four main types: (1) The capillary hemangioma or flat type (port-wine stain); (2) the hemangioma simplex or raised type; (3) the deep or cavernous hemangioma; and (4) the combination type.

The flat type is best exemplified by nevus flammeus. Lesions of this type are persistent and rarely disappear. Although some favorable results have been reported following the use of thorium-X, Grenz rays and tattooing, it is the consensus among dermatologists that lesions of this kind should not be treated. Intensive treatment may result in mottled red and white spots, and/or scarring, which may be more objectionable cosmetically than the original disfigurement. Cosmetic pastes such as Cover-mark® very effectively mask lesions of this type. One of the most common congenital defects is a rather dim port-wine mark on the nape of the neck. It is present in approximately one-third of newborn infants. Pratt,[14] who examined over one thousand infants for evidence of nevi, found this lesion on the nape of the neck in 42 per cent of white and 31 per cent of negro children.

The raised hemangioma or strawberry mark is the most common vascular nevus, except the port-

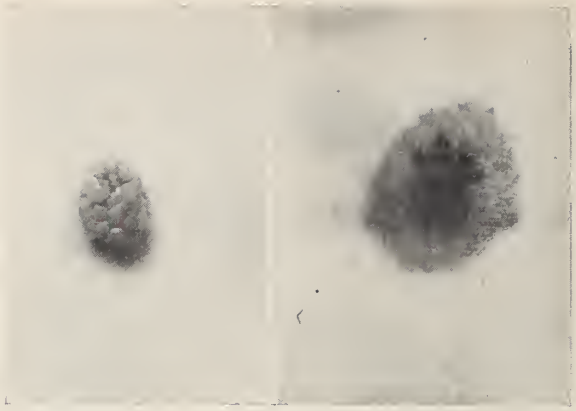
Chairman's Address: Presented before the Section on Dermatology and Syphilology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

wine mark of the neck previously mentioned. Despite the fact that these lesions may disappear spontaneously, it is advisable in most instances to treat the child at the earliest possible moment. In the case of angiomas that remain static or show signs of regression, a delay in instituting treatment may be permissible. However, prompt measures are indicated when there is evidence of growth. Since a few topical applications of solid carbon dioxide or liquid nitrogen will easily and effectively eliminate tumors of this type, it seems foolhardy to permit such a lesion to increase tremendously in size. Strawberry marks that undergo involution, spontaneously or as a result of trauma, may heal with conspicuous scarring or change into a mixed fibrovascular structure.

It is generally agreed among dermatologists that irradiation, particularly with radium, is the treatment of choice for cavernous hemangiomata (deep type) if given at an early age. The best and quickest results are obtained if treatment is begun before the third month of life when endothelial cells of the vascular channels are still immature. Injection of sclerosing solutions is the next most widely used method of treatment. Not infrequently these tumors disappear spontaneously, but they are likely to leave atrophic or anemic disfiguring scars; or a dangerous hemorrhage may occur. The rapidity of growth of a cavernous lesion may be alarming. Sometimes in a matter of weeks a previously amenable growth may become a difficult therapeutic problem. At the 1953 meeting of the American Medical Association, McCuistion[9] presented 45 photographs of infantile cavernous hemangiomata which persisted into adulthood. His presentation was a striking demonstration for those who maintain that all hemangiomas involute spontaneously. Vascular nevi rarely change to hemangioendothelioma or angiosarcoma.

A review of the medical literature can easily leave one confused as to whether to treat or not to treat cavernous hemangiomas. Obviously not all hemangiomas regress spontaneously. The photographs herewith are only a small number of a collection illustrating their persistence and their devastating life-long effects.

What are the potential undesirable effects of persistent hemangiomas? First, the effect upon the psyche and personality of the school-age child because of an unsightly lesion. Second, lesions that are contiguous to or involve vital organs such as the ears, nose, eyes, lips, breasts or genitalia may interfere with function as well as cause grotesque deformities. Third, treatment at a late stage, such as surgical removal, or irradiation after histologic maturity of the endothelial cells, will bring about a much less satisfactory cosmetic result. Fourth, ulceration may occur, with subsequent unsightly scarring.

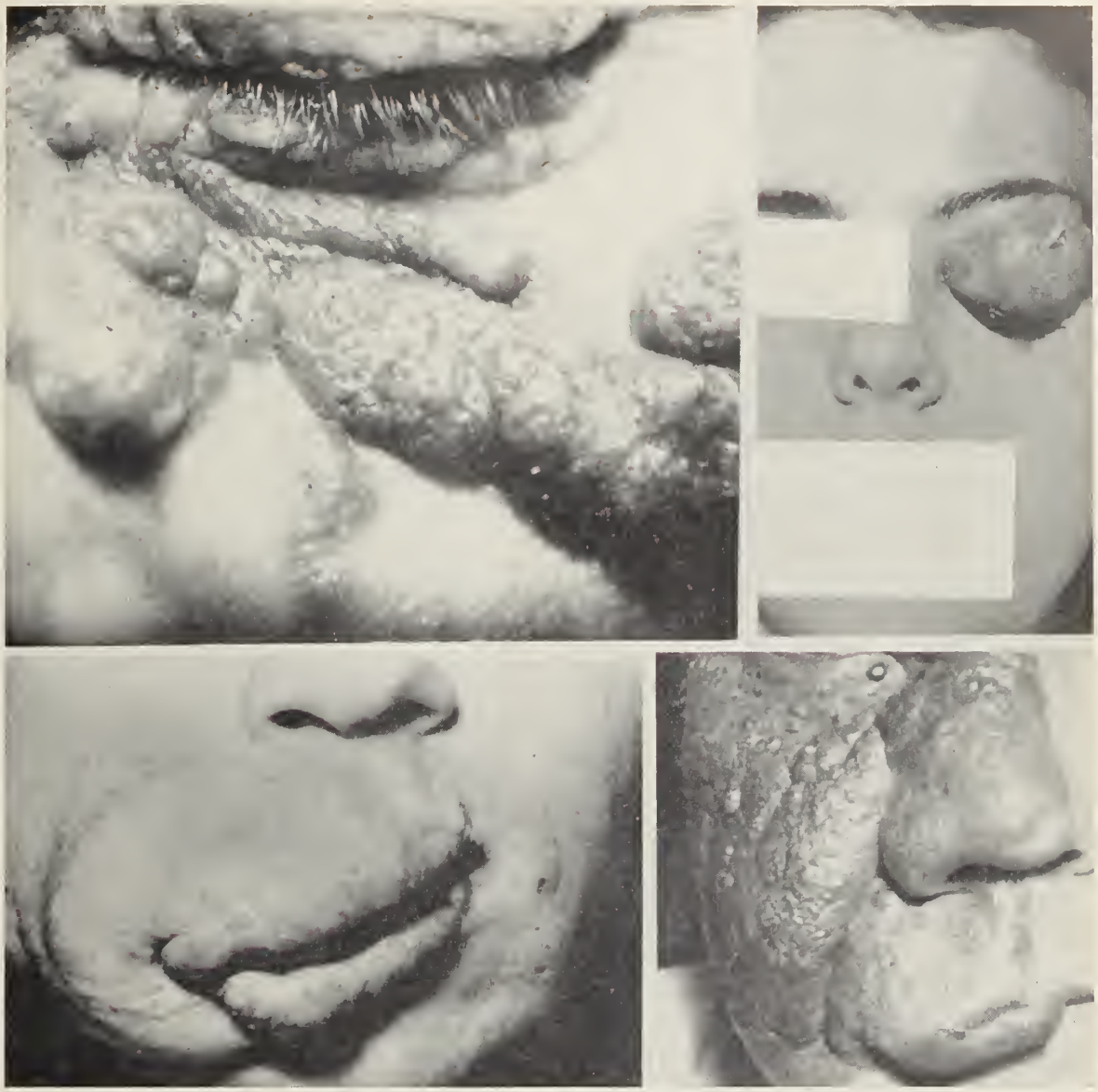


Pigmented nevi (common moles) composed of nevus cells confined to the dermis. These never become malignant. They may be left undisturbed, or excised or destroyed if desired.

Treatment given early in life by competent physicians is safe, cosmetically effective and relatively inexpensive. During the past 25 years the author has evolved the following rules of advice for dealing with hemangiomas. Lesions involving the ears, nose, lips or eyelids should be treated at once, preferably within a month of the time they appear. As to hemangiomas appearing on other areas of the exposed skin—the face, neck, decolletage area in girls, the hands and forearms—if there is no sign of regression by the tenth week, treatment should be started without further delay. For lesions appearing on the normally covered portions of the body the risk of an unsightly persistent lesion or scar is of small consequence.

Lymphatic Vascular Nevi

Lymphatic vascular nevi are characterized by dilatation and new formation of lymph vessels. The favorite sites are the neck, the upper extremities and the mucous membranes of the mouth and tongue. These tumors can be divided into simple, cavernous and cystic types. The simple lymphangioma is characterized by grouped, deep-seated vesicles. A resemblance to frog spawn has been noted. The lesions are usually yellowish, but occasionally they are reddish or purplish because of mingling of small blood vessels. When the vesicles are punctured a clear, colorless fluid exudes. Electrocoagulation or solid carbon dioxide applications are usually effective forms of treatment. The cavernous lymphangioma occurs in the form of a circumscribed elastic tumor. The skin over such tumors may be unchanged, or it may be reddened and thickened. They may grow to alarming proportions. The cystic lymphangioma or cystic hygroma is usually located on the neck. These lesions, unlike the cavernous variety, are not compressible. They are cysts with endothelial linings and serous fluid contents, which



Untreated cavernous hemangiomas persisting into adult life. It is believed that proper therapy, early in infancy could have prevented all or part of these deformities. (Courtesy Drs. C. McCuistion, G. Andrews.)

may grow with much power through the tissues of the neck, often downward under the clavicle and into the axilla or pectoral region. If treatment is not given, the infiltration of these cystic growths may result in death. Rarely, malignant changes may occur. Large cavernous lesions and those of the cystic type should be excised surgically. Irradiation is not recommended.

Pigmented Nevi

Pigmented nevi are the most common tumors of childhood.[17] They may be divided into blue nevi, intraepidermal, junction, intradermal and combination types.

The intraepidermal nevus, histologically, shows proliferation of epidermal elements; however, there are no nevus cells. It usually appears as a superficial, verrucous, raised lesion whose color varies from that of the skin to dark brown, or even black. Such nevi frequently appear as linear lesions. They may be present at birth or appear later in childhood. They rarely become malignant. If they do, they may develop into prickle cell carcinoma late in life. These nevi may be left undisturbed or they may be simply and adequately removed by electro-desiccation and curettage for cosmetic effect.

The blue nevus, histologically, is composed of spindle-shaped melanoblasts in the lower two-thirds

of the dermis. There are no nevus cells in this lesion either. Malignant transformation is rare. According to Anderson,[2] malignant change has not been reported in children. However, recognition of this tumor is significant because clinically it is frequently confused with malignant melanoma. Blue nevi are usually sharply circumscribed, round or oval, smooth, elevated papules or nodules. The color is strikingly blue to blue-black or slate gray. If treated, these nevi should be simply removed with a scalpel.

The junction nevus is so named because of the microscopic finding of active proliferating nevus cells at the junction of the dermis and epidermis. As a rule, it appears as a slightly elevated, smooth, pea-size nonhairy lesion, deep brown to black in color. The most common sites are the face, hands, lower extremities and genitalia. Great interest centers about this nevus because it is considered to be the forerunner of malignant melanoma. However, in children it does not have the same connotation that it does in adults. According to Stegmaier and Montgomery,[18] all nevi in children show junctional proliferation; hence, proliferation should not be erroneously interpreted as active growth or as evidence of a premalignant state. The consensus is that the junction nevus when treated, should be surgically excised.

The term intradermal nevus implies that the nevus cells are confined to the dermis. It is this kind of lesion that is referred to as the "common mole," and it is the most common of all nevi. Histologically, during childhood they show junctional activity. However, as the child matures there is a "dropping" of the nevus cells, which finally results in a clear epidermal-dermal zone. The mole may vary in color from that of normal skin to black, but usually it is brown to brownish-black, is elevated and has a smooth, warty or papillomatous surface. The lesion may or may not contain hair. Pigmented nevi of this type almost never become malignant. Hence, they may be safely treated by any surgical method, refrigeration or excision, depending upon the location of the mole and the technical preference of the clinician.

The term *combination nevus* or compound nevus usually refers to moles with the histologic features of both the dermal and the junction nevus. Spitz[17] said that this microscopic pattern occurs in 98 per cent of moles in children and in only 12 per cent in adults. In children, the compound nevus may be of uniform brown color and be nonhairy and elevated. Clinically, it is usually impossible to distinguish combination nevi from the other types previously discussed. If mixed type is suspected, surgical excision is preferable.

Clinical differentiation of the different types of pigmented nevi is not always easy. Even a well trained and experienced physician must frequently depend on histologic examination for exact diagnosis. It is almost unknown for moles that are pedunculated, that have a verrucous surface or that contain hair to undergo malignant change.[8] The presence of a tuft of hair on a mole is a fairly reliable indication that the lesion is an intradermal nevus, whereas the lack of elevation of a mole suggests that it may be a junctional nevus. Moles on the palms, soles and genitalia are junction nevi in most cases.

There is considerable difference of opinion and misunderstanding regarding the management of moles. The ordinary pigmented nevus need not be removed except for cosmetic reasons. Many clinicians advise the removal of pigmented moles that are present on the palms, soles, toes and genitalia. It is probably good practice to remove them if they are subject to trauma. If secondary infection supervenes, they should be eradicated when the infection subsides. There is universal agreement that when a mole suddenly changes in size or color or bleeds or becomes ulcerated, excision is indicated. If a pigmented nevus is clinically suspicious it is preferable to remove it before puberty. In spite of the fact that junctional activity is observed in practically all moles in children,[17,18] malignant melanoma in childhood is rare. Only a few such instances have been observed. There is a popular fear that disturbing a mole in any way may be dangerous. Slaughter[16] stated that he had never observed and in a survey of the literature had been unable to find report of an authenticated instance of malignant change in a benign nevus after incomplete removal with an electric needle or by cautery or excision. Similarly, removal of a lesion for biopsy neither induces malignant change in a nevus nor causes metastasis if melanoma exists.

The halo nevus is a small, round spot with a central brown or dark brown maculo-papule surrounded by a white halo of depigmentation. Gradually the pigmented portion of the lesion disappears centripetally, leaving in its stead a spot of leukoderma. Histologically, this is a nevoid lesion and requires no treatment.

Xeroderma pigmentosum is a rare congenital anomaly with photosensitivity. Clinically, the dermatosis bears a decided resemblance to chronic radiodermatitis and farmer's or sailor's skin. It is a true precancerous lesion of childhood, since epitheliomas generally develop in the affected areas. Squamous and basal cell carcinomata usually result. The development of melanoma and fibrosarcoma has also been reported. The patients seldom reach adult life.

Von Recklinghausen's disease or neurofibromatosis, another congenital anomaly, is mentioned because sarcomatous transformation of fibromata can

occur. It has been stated that malignant change develops in 13 per cent of all cases, but this would appear to be greater than the actual incidence, probably owing to the fact that complicated cases are more likely to be reported than the uncomplicated.

Cancer in Childhood

Cancer in childhood has been more frequently emphasized in the literature during recent years. This attention is no doubt well deserved, as cancer is now the second leading cause of death in the age group of one to fourteen.[6,17] Twenty years ago it was not listed even among the first ten causes of juvenile mortality. It should be pointed out, however, that leukemia accounts for almost half of the deaths caused by malignant disease in childhood. The tumors that are essentially those of infancy and early childhood are neuroblastomas of the retina, mixed malignant neoplasms (Wilms' tumor) and neuroblastoma of the adrenal and other parts of the central nervous system.

Wells[19] made an exhaustive, critical review of the literature on the occurrence of congenital malignant neoplasms. He said that of about 250 neoplasms reported present at birth, only 66 could be considered established beyond possible doubt. Nearly half of them were sarcomas. Of all malignant tumors, sarcoma is practically the only one common in adult life which is likely to be present at birth. Wells found reports of only two cases of squamous cell carcinoma occurring at birth—one of the lip and another of the tongue. He stated that until 1940 there was only one case (reported by Coe) that may have been a prenatal malignant cutaneous melanoma. He cited only four cases in which he felt there was strong enough evidence to indicate that the intrauterine transmission of malignant growth from mother to fetus had occurred. The malignant diseases transmitted included carcinoma, lymphosarcoma and melanosarcoma. Dargeon[5] recently reported another instance of transplacental transmission of malignant melanoma.

Cutaneous malignant tumors are rare at any age before puberty. Sarcomas of various types (round cell, spindle cell, giant cell) occasionally occur in children. The lesions may be primary or secondary, single or multiple. Cutaneous squamous cell carcinoma occurring other than when associated with xeroderma pigmentosum, is exceedingly rare. A few instances of basal cell carcinoma in children have been reported.[12,13,15] These occur as numerous lesions resembling nevi, sebaceous adenomata and cylindroma. Epitheliomata of this type are considered to be nevoid tumors, and they remain benign even into adult life, even though the histologic features are typical of basal cell carcinoma.

A discussion of melanomas in childhood would be incomplete without including the so-called juvenile melanoma. Fatal malignant melanoma in childhood is extremely rare. Allen and Spitz[1] were able to collect only five cases of fatal malignant melanoma. Montgomery[18] observed only three such cases at the Mayo clinic. The juvenile melanoma ranges in size 0.5 cm. to 3 cm. in diameter. The lesion is elevated, firm, smooth or warty. It may be skin colored, pink or red just as frequently as brown or black. Spitz now believes that two-thirds of juvenile melanomas may be diagnosed on the basis of histologic features but that the remaining one-third cannot be distinguished from the malignant melanoma of adult life. In the latter case, the prepubertal age of the patient dictates the diagnosis of juvenile melanoma. There is a striking rise in the death rate from melanomas after puberty. Before adolescence, melanoma remains benign, treatment by simple wide excision is adequate. The much discussed malignant melanoma is said to arise from pigmented nevi in 30 to 60 per cent of cases.[10] Physicians generally are familiar with the description of the blue-black, steel-blue or black, flat or elevated nodule. However, a rapidly growing lesion may be light brown. An amelanotic melanoma may be flesh colored, pink or red. Only 2 per cent of melanomas are radiosensitive; hence, irradiation is contraindicated. Survival rates have not been improved by mutilating operations. Becker, and others have expressed belief that the best results have followed removal of the primary tumor including a large surrounding area with lymphatic channels and regional lymph nodes en bloc, when indicated.

Under the term lymphoblastoma most dermatologists include leukemia cutis, Hodgkin's disease, lymphosarcoma and mycosis fungoides. Leukemia is the most important, since it accounts for almost half of the cancer deaths of childhood. The majority of cases are of the acute lymphocytic type which are rapidly fatal. The usual symptoms in all forms of leukemia are pallor, weight loss, sore mouth or throat, dysphagia, bleeding gums, ulcerogangrenous stomatitis, bone destruction, petechiae, nodules and purpuric spots. Petechiae and ecchymosis are the most common cutaneous lesions, according to Bufkin and Davison.[3] Aminopterin, amethopterin and other folic acid antagonists will probably prolong life the longest. Corticotropin (ACTH) and cortisone may cause remission for as much as 33 weeks in lymphatic leukemia. Urethane is the least toxic of the chemotherapeutic agents.

Hodgkin's disease or lymphogranulomatosis is the next most common of the lymphoblastomas. It usually starts in the retroperitoneal and mesenteric lymph nodes, extends to the left cervical nodes and

then to axillary, inguinal and mediastinal nodes and spleen.[3] Observation of Reed-Sternberg cells in lymph node biopsy is diagnostic. Until 1946 only 233 cases of Hodgkin's disease were reported in children. Eighty-three per cent of the cases occurred in males.[4] Male predominance is noted also in lymphosarcoma and leukemia. The disease is rare in negroes. Cutaneous involvement is less common in children than in adults; it consists of pruritic, macular and papular nonspecific lesions. There is a tendency to lichenification of the skin, due to scratching. Specific infiltration of the skin is uncommon. Occasionally, the disease may be complicated by herpes zoster. Hyperpigmentation is common in Hodgkin's disease but comparatively rare in other diseases of the lymphoblastoma-leukemia group. Pruritus and nonspecific eruptions also occur most frequently in this disease. As with other malignant neoplasms, the lymphoblastomas tend to develop more rapidly in children than in adults. However, lymphogranulomatosis offers a far better prognosis for palliation and survival than does lymphosarcoma or leukemia. The treatment of choice is irradiation. Nitrogen mustard, especially triethylene melamine (TEM), may also be effective in making the patient more comfortable and in prolonging life.

Under the broad term lymphosarcoma, Eller[4] includes reticulum cell sarcoma, lymphosarcoma of the lymphocytic type, and follicular lymphosarcoma. There are no sharp lines of differentiation between these conditions. At times it is even impossible for pathologists to distinguish Hodgkin's disease from lymphosarcoma or the latter from lymphatic leukemia. Transition from one type of lymphoma to another also occurs. The most frequently involved sites of lymphosarcoma in children are the neck, abdomen and retroperitoneal regions. This condition should be kept in mind if there is a complaint of swelling anywhere in the body. Metastatic nodules are the most common dermatologic finding. The nodules may be superficial or subcutaneous. They are firm but not as hard as those of metastatic carcinoma. They are usually bright red, but may have a blue tinge. Radiotherapy is still the treatment of choice. Craven advocated surgical excision when feasible, followed by irradiation. In his experience, as well as that of other investigators, the cases of lymphosarcoma (or Hodgkin's disease) in which there was long survival and even apparent cure, were those in which the disease was treated aggressively while still early and localized. Nitrogen mustard and TEM have been valuable as alternative therapeutic agents and at times have made resistant lymphomatous tissue amenable to irradiation again.

Three conditions considered to be variants of lymphosarcoma will be briefly mentioned because they have been reported in preadolescent children. They include giant follicular lymphoma, Spiegler-Fendt sarcoid and lymphocytoma cutis. These conditions are rare and run a comparatively benign course. Giant follicular lymphoma occurs predominately in the lymph nodes and in the skin. The dermal lesions are characterized by groups of slightly raised, small, brownish-red nodules. The number of lesions is small, and the face is the site of predilection. It is one of the least malignant of the lymphomas but it may progress into other forms of lymphoblastoma and ultimately to death. There are said to be two forms of Spiegler-Fendt "sarcoid," a localized and a disseminate form. The localized form is relatively benign. It is characterized by grouped, reddish to purplish nodules or plaques that suddenly appear on the face and elsewhere. The lesions are few in number and resemble the sarcoid of Boeck clinically; hence, the inappropriate term *sarcoid* appended to the title. The disseminate form may involve internal organs as well. Lymphocytoma cutis is a benign lymphoma. The lesions are localized lymphocytic infiltrations limited to the skin, resulting in bluish or brownish-red patches which rarely exceed the size of a fingernail. They are usually located on the face, scrotum or extremities. The lesions are slow growing and remain static after reaching a certain size. This condition may be treated satisfactorily by surgical excision or irradiation.

Mycosis fungoides is the last major member of the lymphoblastoma group. The skin is primarily involved. The course is the slowest, survival is the longest, and it is least malignant of the major members of the group of lymphoblastoma. It is essentially a disease of adults although it occasionally occurs during the first two decades of life. It characteristically passes through three stages in its evolution: (1) A premycotic stage, which is manifested by a nondescript pruritic dermatitis; (2) an infiltration stage, characterized by thickened plaques; (3) and finally a tumor stage. Irradiation is the treatment of choice.

It is common knowledge that some lymphoblastomas change from one type to another, and that transition forms exist between all the groups. It should be emphasized that the cutaneous manifestations of the lymphomas are not specific or clinically diagnostic, with the exception of mycosis fungoides.[11] The specific classification of a lymphoblastoma may frequently be impossible even pathologically. The pathologist, at times, can only submit a diagnosis of lymphoblastoma.

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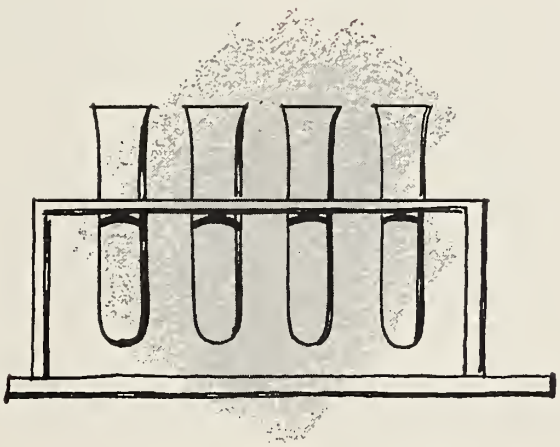

Strawberry Hemangiomas

The Natural History of the Untreated Lesion

ALVIN H. JACOBS, *M.D.*, San Francisco

• **A review of the literature on the natural history of strawberry hemangiomas revealed overwhelming evidence of the satisfactory spontaneous involution of over 95 per cent of these lesions without the scarring and danger of other sequelae inherent in the various forms of treatment.**

In a study of 105 strawberry nevi observed for more than one year, 97 per cent of the lesions had either completely disappeared or were regressing satisfactorily.

A cross-section study of 1,735 consecutively examined children in routine pediatric practice showed hemangiomas to be present in 10.1 per cent of all infants from birth to one year of age but that this incidence drops to 1.5 per cent in children over five years of age, confirming the fact of spontaneous involution.

THE DIVERSITY of opinion concerning the proper management of the common strawberry (cavernous) hemangioma arises from the continued lack of appreciation of the natural history of this lesion. It is the purpose of this communication to call attention to the high incidence of this kind of nevus in infancy and to reaffirm the superior cosmetic results which nature regularly affords when these lesions are not treated.

The lesions to be considered are not the flat vascular nevi (spider nevus, erythema nuchae or port-wine stain), nor the multiple hemangiomatous syndromes, but rather the raised vascular nevi (strawberry marks, cavernous hemangiomas).

Hemangiomas are not truly neoplastic despite their semblance of progressive and invasive growth, but are, rather, malformations originating from a mass of vasoformative tissue misplaced or unused during fetal development.[6] Enlargement and extension of them are due to canalization and establishment of blood flow in fresh parts of an already existing malformation. The extent of the lesion is, therefore, probably largely predetermined by the distribution and amount of the unused or misplaced vasoformative tissue.

Strawberry nevi may be found on any part of the body surface, appearing first at or soon after birth as sharply delineated pale areas which become bright red, raised and tense within the first few weeks. A firm subcutaneous (cavernous) mass often develops under the surface strawberry lesion and can be felt extending out beyond the area visibly involved. Growth is usually rapid during the first three to six months of life. Then it slows and early signs of involution appear between six months and one year of age. This spontaneous regression is first marked by the lesion's becoming less tense and less bright in color. Frequently at this time small spots of blue discoloration appear, which enlarge and coalesce during the second year. Soon these fade, leaving islands of normal appearing skin. By the time the child is four or five years of age, most of the dull remnants of angioma have disappeared, leaving only more or less atrophic skin which gradually reverts to normal texture. In most instances after several years even the child's mother can no longer recall exactly where the lesion was.

The literature of the past 20 years contains many excellent documentations of the natural regression of angiomas. In fact, as far back as 1900, Duncan[5] in a monograph on vascular lesions, recognized the almost universal tendency of these lesions to spontaneously involute. Stelwagon[10] in 1902 wrote of natural regression of angiomas in his textbook of dermatology. The first actual statistical study of this phenomenon was that of Lister[8] in 1938. He reported on 77 patients with 93 strawberry hemangiomas. Of these, 92 either regressed completely or were showing definite signs of spontaneous regression. Lister concluded,"No exception has been found to the rule that nevi which grow rapidly during the early months of life subsequently retrogress and disappear of their own accord, on the average about the fifth year of life."

By 1942, the phenomenon of natural regression was recognized by some dermatologists, as evidenced by the statement of Sulzberger and Wolf:[11] "Fortunately, most hemangiomas of the cavernous type 'heal' spontaneously with or without ulceration. . . .

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Presented before a Joint Meeting of the Sections on Dermatology and Syphilology and Pediatrics at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

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The regressive changes often appear first in the center. . . . All traces of color have usually disappeared by the fifth year. . . . Since this is the usual course without treatment, drastic measures . . . are often inadvisable, and treatment should generally be expectant and conservative."

Bowers[3] in 1951 also stated that the great majority of raised (cavernous) nevi resolve spontaneously—"a happy outcome which differs from that of many forms of treatment in that it is unaccompanied by anything more than the faintest scarring. The ordinary cavernous lesions are never seen in adults."

Brain and Calnan[4] in 1952 reviewed 614 cavernous angiomas, of which 295 were treated with radium, 98 with x-ray, 74 with radium and x-ray, and 147 were not treated; and as to this last group, they stated, "The ultimate results were equally satisfactory."

Ronchese[9] in 1953 published an excellent report illustrated by many photographs of spontaneously involuting hemangiomas. He was able to get follow-up information on 33 of the 59 cases in which he had left the lesion untreated. In 24 of these cases the lesion had disappeared completely, in four had not changed and in five had been treated surgically or by radiation elsewhere.

With the aid of school health officers in the Province of Gelderland, Netherlands, Van Der Werf[12] was able to examine 60 school children with remnants of spontaneously involuted strawberry marks and 266 children who had received various forms of treatment. The results were classified as cosmetically satisfactory, moderately satisfactory or unsightly. The results of this survey clearly showed the superior cosmetic results in the untreated cases (Table 1).

TABLE 1.—*Results in Cases of Treated and Untreated Strawberry Hemangioma (Van Der Werf[12])*

	Untreated	Cautery	Radiation	Operation
Number of cases	60	68	62	136
Satisfactory	46	24	15	30
Moderately satisfactory	12	34	25	56
Unsightly	1	10	22	50

TABLE 2.—*Results, as Reported by Wallace,[13] in Series of Untreated Cases of Nevi*

	290 Nevi With No Deep Element	121 Cavernous Nevi
Impossible to detect site of nevus	120	15
Only slightly atrophic skin remains	157	78
Partial involution—not enough remaining cosmetic disability to require treatment	10	20
No involution	3	8

In a controlled study, Walter[14] reported 88 cavernous hemangiomas treated by x-ray and 83 untreated. At the end of five years, 96 per cent of the untreated patients and 94 per cent of the treated ones had satisfactory results. Walter concluded that x-ray speeds resolution at first but does not alter the eventual result, and that nature leaves better cosmetic results than x-ray therapy.

Still another well studied series was reported in 1953 by Wallace,[13] who followed 208 patients with strawberry nevi, many multiple, and 98 patients with 121 cavernous nevi, of which 78 had some superficial capillary element. The period of follow-up was seven years, none of the patients receiving any treatment in that period. His results (summarized in Table 2) clearly demonstrated the high proportion of satisfactory results from spontaneous regression.

Recently Lampe and La Tourette[7] reported on 112 cavernous hemangiomas in 84 patients with no treatment. In all but one case there was substantial regression by the time the patient was five years of age. This study was illustrated with a series of excellent color photographs demonstrating spontaneous regression. In another recent publication, Bivings[2] reported on 22 years' observation covering 236 cases. He emphasized the superior cosmetic results of spontaneous resolution and also presented statistical data showing a drop in frequency of these nevi from 8.7 per cent in the first year of life to 0.55 per cent in patients seen after the second birthday. This is strong supporting evidence that spontaneous regression does take place.

In a recent report from the Department of Radiology at Duke University, Abdulkerim, Boyd and Reeves[1] gave data on 323 cases of hemangioma of the skin, all treated with either roentgen irradiation or radium. The period of follow-up was one to twenty years, and the results were as follows: Satisfactory in 72.5 per cent of cases, fair in 22.9 per cent, and poor in 4.6 per cent. The results obtained with radiation therapy, then, were no better than with no treatment as reported by many other investigators. In addition the Duke group mentioned many late complications of radiation, including 18 cases of serious scarring requiring surgical correction, a case of puckering of the lip, one case of shortening of the leg with atrophy of the leg muscles, one case of enlargement of a treated breast and four cases of unsightly telangiectasis.

REPORT OF PRESENT STUDY

The present series consists of 142 patients, seen in private pediatric practice, who had 156 strawberry hemangiomas, including both superficial and deep lesions. Of the 142 patients, 91 were females and 51 males. The 156 lesions were distributed as follows: Head and neck, 50; upper extremities, 21;

trunk, 59; lower extremities, 26. It was possible to get follow-up data on 105 of the lesions for periods of one to five years. In the remaining cases the patients either were treated elsewhere or moved to other communities. In all cases, Kodachrome transparencies were made of the lesions at from three-month to 6-month intervals so that the course of involution could be recorded and objectively observed.*

Of the 105 lesions in which more than a one-year follow-up was possible, 47 had completely disappeared and another 54 had regressed to the point that no cosmetic detraction remained. Only four of the lesions failed to show signs of involution in over one year, and these were all very small lesions which were present at birth and did not grow disproportionately during the first months of life. Thus, of 105 untreated hemangiomas observed for one year or more, 97 per cent were either entirely gone or had regressed to the point that eventual resolution was certain.

In order to gain further evidence on this matter of spontaneous involution as well as information as to the prevalence of this type of lesion, a cross-section study was carried out in which the incidence of strawberry nevi or of detectable remnants of nevi at various ages was recorded in a series of 1,735 consecutive children examined in routine private practice. The results are shown in Table 3.

The striking feature of this study was the high incidence of the nevi in infants (10.1 per cent) as well as the clear evidence that the great majority of nevi disappear with no recognizable residual by five years of age.

CONCLUSION

If a strawberry (cavernous) hemangioma appears during the first few weeks of life, and grows during the first few months of life, then treatment should be withheld, since there is a remarkable tendency for this type of lesion to regress spontaneously.

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*A selection of these color transparencies was shown as an exhibit at the Convention of the California Medical Association in May, 1955 and at the Academy of Pediatrics in October, 1955. A portion of this exhibit has also appeared as a Clinicolor Feature in Modern Medicine, May 1, 1956.

TABLE 3.—*Incidence of Strawberry Nevi in 1,735 Consecutive Children Examined in Routine Pediatric Practice*

	Number of Children Examined	Incidence of Angiomas (Per Cent)
Birth to 1 year	645	10.1
1 to 3 years	484	8.1
3 to 5 years	274	2.9
5 to 15 years	332	1.5

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Psychiatry and the Law

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• In *Rex vs. Arnold* (1724) it was held that to avail himself of the defense of insanity "a man must be totally deprived of his understanding and memory, so as not to know what he is doing, no more than an infant, a brute, or a wild beast." Although there has been some modification of this formula in most jurisdictions, the courts still operate under the McNaghten Rule (1843) which is no more logical and actually is more difficult to apply. That such a situation exists in 1956 is a reflection on the indifference of society—and particularly the courts which it elects—as well as on the failure of modern psychiatry to communicate its viewpoint to society. If we are to correct the sad formulae of the "right and wrong" and "policeman at the elbow" tests, we must have more study and better methods of communication in this area.

A similar state of confusion exists in the methods of commitment of mentally ill people to psychiatric hospitals. The methods prescribed by law are archaic and cruel—and again reflect the failure of modern psychiatry to communicate its understanding to the legislatures and courts.

There are many other areas of conflict between law (which looks to the past for its insights) and psychiatry (which seeks for its concepts in the current scientific advances).

THERE WOULD be no need for law were it not for the areas of behavior with which psychiatry is concerned—the attributes of feeling, thinking and acting which are at once characteristic of human life and which create the need for the establishment of law in societies of two or more people. Normally, we recognize the need to mitigate or surrender certain personal sovereignties in order that we may derive comfort from the knowledge that we need not constantly concern ourselves with fear of personal danger. Persons who are incapable of this kind of understanding become offenders, and society segregates, punishes or executes them. Although we may not be aware of the presence of law, we quickly sense its necessity when it is absent.

It is impossible to cover the entire subject of the effect of human behavior on other humans. Furthermore, there are so many cross disciplines to be invoked in such study that I am not qualified to attempt it. In sad fact, it is most difficult for me to discuss even the area of impact between the psychiatrist and the lawyer because I am not trained in law. (In this respect I confess my inadequacy since some lawyers seem to have no difficulty in discussing psychiatry.)

It is my contention that the difficulties between psychiatrists and lawyers are as much the fault of the psychiatrists as of their professional colleagues. We tend to assume more science in our specialty than there actually is. We make the further false assumption that because a thing makes scientific sense to us, it must necessarily make scientific sense to all others—including those who are not trained in science. When a nonscientist fails to grasp a scientific fact, we psychiatrists tend to revolt and retreat. Such behavior is not only not becoming to those who claim to have knowledge of psychological matters, but it also defeats the possibility of instilling insight into and bringing the law around to a recognition of modern scientific fact. Since the law is in charge and since in actual practice (whether we like to think so or not), might makes itself "right," the psychiatrist is inevitably forced to artificially mold and compress scientific concepts into a philosophy and language imposed by the legal code—even though this may result in scientific nonsense. A failure to consider this results in personal feelings of suspicion and hostility between the professions.

There is a general tendency to reject that which we do not understand—particularly if we think we do understand it. As an example of this, permit me to quote from a grand jury report:[1] "One local superior court judge felt that the use of a psychiatrist by a judge invaded the personal rights of persons appearing before him and indicated that judges could probably handle the problems as well as a psychiatrist." That this report is dated 1949 rather than 1849 is a reflection of failure of communication between psychiatry and the legal profession. It is no more realistic to assume that a judge by virtue of his office is less an invader of personal rights than a psychiatrist, or that a judge by virtue of his office acquires the specialized knowledge of a psychiatrist, than to assume that a military officer becomes a gentleman by virtue of his commission.

Let me cite another example. A court issues an order that patients who have been taken into custody and committed to a state hospital may not be scientifically demonstrated for teaching purposes to a class of upper division and graduate students in clinical psychology. Since mental health is the num-

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ber one medical problem of the nation and since the need for school psychologists is enormous, such an order results in the fiction of having to demonstrate a patient before a legal petition for his commitment is filed—or waiting until the patient is delivered by the sheriff to the state hospital and demonstrating him there. In short, what is illegal in one jurisdiction is legal in another. There is only one way to train people in clinical subjects and that is to demonstrate patients. Failure to train students in this manner results in swivel-chair psychologists of a type one still unfortunately sees in some schools and probation departments. These are persons who have learned out of books but not out of people. And yet, the very court that forbids the demonstration of patients to these professional students may find itself rendering judgment on the basis of a report submitted by the victim of such educational malnutrition. The court is scarcely to be blamed for such thinking. It is trained in legal ritual and is unaware of the fact that in the United States the teaching of clinical psychiatry and psychology has traditionally been by exposing the students to the actual disease.

Since the law is a philosophical concept of that which is right and that which is wrong, it is deeply imbedded in tradition, and its dependence on precedent and its apparent need to worship at the altar of antiquity inevitably results in a time-lag between the impact of scientific discovery and modification of law to meet these discoveries. I might cite, for example, the laws of England and Canada where suicide is still "self-murder" and as such is denounced as a crime and is punishable. To come closer to home, let us consider the case of *Barry vs. Chaplin*[2] in 1946 where it was held that Chaplin was the father of Barry's child on evidence of copulation and of physical resemblance, despite the fact that scientific blood tests showed conclusively that he could not have been the father. Fortunately the code was changed in 1953 and now recognizes these scientific tests—but the sad fact is that scientific fact is not fact until it has been declared fact by the Code or by judicial decision.

We are puzzled also by the court which declares a man to be a sexual psychopath and commits him to a special treatment unit in a state hospital. After his return to court some years later with a certificate of recovery from the hospital, he is sentenced to state prison with the statement. "The last two years were for your benefit and now you can spend some time in prison for the peoples' benefit." Will the people really benefit from this? Is this likely to assist in rehabilitating the man who has already been medically certified as recovered? Or is it really the application of the archaic principle of lex talionis,[3] "life for life, eye for eye, tooth for tooth, hand for hand, foot for foot, burning for burning, wound for wound, stripe for stripe?" I am tempted here to quote Arnold Toynbee's comment, "One way of judging a civilization is by what it does with its convicted criminals."

The area of therapeutic abortion is interesting. A 27 year old woman was the victim of a criminal assault which included burglary and rape and resulted in pregnancy. One can imagine the mental state of anyone who is raped, but to have to look forward to the prospect of giving birth to such a child and of raising this child along with the issue of one's married state would require a most remarkable emotional adjustment. Under the law this woman has no right to choose whether or not she wishes to give birth to this child, since the Penal Code[4] declares that abortion may not be performed "unless the same is necessary to preserve her life." Therapeutic abortion for the preservation of mental life is apparently forbidden.

To continue with the inconsistencies which disturb us, I will call attention to the Welfare and Institutions Code,[5] which specifies that "medical examiners" to serve on panels which recommend the commitment of mentally sick people shall be physicians who "have been in active practice of their profession at least five years." There apparently is no other qualification except that they be of good repute. On the other hand, the Penal Code[6] requires that when a defendant pleads not guilty by reason of insanity, the court must appoint two "alienists" to investigate his sanity. Similarly, the Code[7] specifies that no less than two "psychiatrists" shall examine convicts suspected of sexual psychopathic states. In short, if one wishes the luxury of examination by experts in psychiatry, one must be careful to commit a crime.

We are confused by other legal determinations. In December 1955 a man certified as mentally ill was committed to a state hospital. Subsequently, on a writ of habeas corpus, another court discharged the patient on the ground that he had been illegally detained because no notice was served on his wife that he was to undergo a hearing for mental illness. Within a few hours the patient went to the home of the student who had testified in his behalf, choked him, and said, "I could kill you, you know." Granted that a technical violation occurred, it would seem to a psychiatrist that the logical thing would be for the court to admonish and instruct the officials required to serve such notice and to proceed to try the case on whether the man was mentally sick and dangerous or not. Instead, the baby was thrown out with the bath.

The confusion in which the psychiatrist finds himself does not end here. A "sexual psychopath"[8] is "any person who is affected in a form predisposing to the commission of sexual offenses and in a degree

constituting him a menace to the health or safety of others with any of the following conditions: (a) Mental disease or disorder, (b) psychopathic personality, (c) marked departures from normal mentality." This category is differentiated in the Code[9] from a "mentally abnormal sex offender," who is defined as "any person who is not mentally ill or mentally defective." We have difficulty in determining how a man may be "mentally abnormal" and at the same moment be "not mentally ill or mentally defective."

How are we to convince the court that a narcotic addict who engages in shoplifting or prostitution in order to obtain the money with which to buy drugs is not "of bad repute or bad character?"[10] Where such a person voluntarily applies for commitment to be cured of addiction, a record of criminal behavior in order to satisfy the need for narcotics nullifies the patient's final decision that his is a bad way of life and that he wishes to have help to correct it. In chronic alcoholism the very same prerequisite exists with the additional requirement[11] that before a judge may make the commitment there must be reasonable ground for believing that, if committed, he will be "permanently benefited" by treatment. The strict application of this rule would preclude anyone's commitment since no one can certify that there will be "permanent" benefit.

What are we to do with the hypothetical question which when prepared by the prosecution is bound to result in one type of answer and when offered to the same witness by the defense is so prepared that it is bound to result in the opposite answer. Is not this the cause of headlines protesting the "battle of experts" rather than the suspicion that there is venality among them? How can anyone really believe the fiction that a hypothetical question that takes hours to read can be clearly understood while one listens to it for the first time, without further study, and that the answer to it can be a sensible one? Yet we are expected to be able to do this, and if an expert were to ask for several hours in which to review the question, he would be held up to the jury as a slow-witted fool.

The most common method of admission to a state hospital is on judicial order. The patient is taken into custody by a peace officer and placed in detention, usually in a county hospital, but where no such facility exists, a section of the jail[12] is designated for this purpose. The paranoid who is confined in a jail has no difficulty in deciding that his delusion that he is being followed by law officers who mean to persecute him is a fact. The patient admitted to a county hospital arrives at the same conclusion but only after a period of confusion during which he wonders why a peace officer should serve him with legal papers, arrest him, and then conduct him to a hospital. In either case, the delusional idea is reinforced. In some counties the patient is conducted to the courthouse for his hearing. Rarely does the patient consider it a civil process; witness the frequency with which judges have to reassure them that this is not a criminal proceeding. If the patient is *obviously* sick, the "defense" may resort to trying the integrity, industry, intelligence and competence of the experts instead of the issue of the patient's mental health. If he "wins" his case, the patient loses his opportunity for treatment. In substance he retains an attorney to "protect" him, with the result that he is deprived of the protection which he really needs. In any event, demand may be made for trial by jury. In no other type of illness is the decision as to diagnosis and treatment left to 12 people who are carefully selected for their ignorance of the subject.

In the judicial procedure even after the patient has been found mentally sick, the requirement of the law is that the court intone: "It is further ordered and directed that the sheriff of this county take, convey, and deliver said person to the proper authorities of the hospital or establishment designated herein, to be cared for as provided by law." In substance, after all the explanation is made to the patient that this is a civil procedure designed to provide him with treatment and that he is not considered to be a criminal, he is told that he will be delivered by a sheriff. Why he is not given the dignity of care and transportation by hospital personnel rather than a peace officer is not clear to the psychiatrist.

Since only 3 per cent of patients actually require judicial commitment, were the law altered to permit their admission on the certificate of a physician—as in New York—most patients could receive treatment in this way. If the objection is raised that venality on the part of the physician might enter into confinement without judicial supervision, the answer is that this method of admission to private sanitaria has been going on for years, and so far as I know there has been no scandalous behavior associated with it. An impossible conspiracy between psychiatrist and state hospital would have to exist to "railroad" patients. Besides, mail addressed to public officials by patients in state hospitals is not censored, the writ of habeas corpus is available, and a patient admitted on a physician's certification would always have access to it.

The area which has provided the greatest difficulty in communication between lawyer and psychiatrist concerns tests of criminal responsibility. In the seventeenth century, Hale[13] held that "absolute madness," a "total deprivation of memory," would excuse a criminal act. In *Rex vs. Arnold*[14] (1724), the court held that to avail himself of the defense of insanity "a man must be totally deprived of his

understanding and memory, so as not to know what he is doing, no more than an infant, a brute, or a wild beast." In 1800, Hadfield[15] considered himself to be the saviour of mankind and felt that he had to become a sacrifice just as had Jesus Christ. To attain his end he needed to be legally executed and as a result of this reasoning he planned and attempted to assassinate the king. In his defense the theory was offered that a man could know the difference between right and wrong, could understand clearly the nature of the act he was about to commit, could carefully plan and execute the act, and yet, if the act was the result of his mental disorder, he should not be considered criminally responsible. The jury agreed and found him not guilty by reason of insanity.

In 1843 McNaghten killed Drummond. Following his trial and acquittal on the ground of insanity, the House of Lords requested the judges of the common law courts to formulate rules for the determination of criminal responsibility. Despite the sensible and scientific formula of the Hadfield case, the so-called "right and wrong test" or McNaghten Formula[16] evolved from this. It declared in substance that to avoid criminal responsibility one must have suffered from defective reason due to disease of the mind to the extent that the accused did not know the nature or quality of his act, or, if he did know it, that he did not know that what he was doing was wrong. That this definition is followed to this day presents an interesting example of the cold, dead hand of legal tradition reaching out ever since 1843 and controlling the thinking of the courts despite the fact that science has made enormous advances.

One notable exception is *State vs. Pike*[17] (1869) in New Hampshire, where the rule has been that insanity as a defense is one of fact rather than law and a finding by the jury that an act was the product of mental disease establishes the defense of insanity. A similar rule prevails in Scotland, Denmark, Belgium, France, Netherlands, Norway, Switzerland, Germany and Egypt.

Among eminent judges who have written on this subject may be found Justice Cardozo,[18] who stated: "Everyone concedes that the present definition of insanity has little relationship to the truths of mental life. If insanity is not to be a defense, let us say so frankly and even brutally, but let us not mark ourselves with a definition that palters with reality. Such a method is neither good morals nor good science nor good law." More recently, Sobeloff,[19] Solicitor-General of the United States, wrote: "The McNaghten rule requires medical witnesses to testify in terms that to them are artificial and confining. A doctor can offer expert judgment when he talks of illness, disease, symptoms, and the like. . . . If the wrong questions are asked, it should surprise no one if wrong answers are given." What is referred to here is the fact that the right or wrong test demands of the psychiatrist that he hold himself forth to be expert in the field of morality—something which he is not. It fails to consider modern constructs in psychiatry, such as the wholeness of the personality and behavior and the abandonment of the concept of monomania. In this connection the United States Court of Appeals[20] stated, "The modern science of psychology does not conceive that there is a separate little man in the top of one's head called reason whose function it is to guide another unruly little man called instinct, emotion or impulse in the way he should go." In *Durham vs. United States*[21] (1954) the same court argued: "By its misleading emphasis on the cognitive, the right-wrong test requires court and jury to rely on what is, scientifically speaking, inadequate and most often invalid and irrelevant testimony in determining criminal responsibility. In attempting to define insanity in terms of a symptom the courts have assumed an *impossible* role, not merely one for which they have no special competence." For this reason the court invoked its inherent power and established the following rule: "It is simply that an accused is not criminally responsible if his unlawful act was the product of mental disease or mental defect." This definition was supported by Biggs,[22] chief judge of the third judicial circuit of the United States, in his recent book *The Guilty Mind.*

To provide proper safeguards, the Group for the Advancement of Psychiatry[23] recommended that a person who by virtue of mental disease has committed an offense should be subjected to a considerable period of observation and review by the court before he is again permitted the freedom and privileges of society.

I cannot close without saying a word about the so-called "battles of experts." The appointment of experts by the courts from a panel recommended by the state department of mental hygiene would help in solving this problem. In such a system the prosecution, the defense, and the court could select a commission of three experts who would then examine the offender and make their report available to all parties concerned. If these parties then desired to introduce their own special experts, they would have the privilege of doing so, but the jury would be permitted to know that the original commission of three experts had been appointed by the court. A similar method has operated in Massachusetts since 1923 under the Briggs law. A voluntary system of this sort exists in Cincinnati, where the members of the psychiatric society refuse to testify for either side and insist that they will serve only on appointment as "friends of the court."

In my opinion there is a need for continuing committees of scientists and lawyers to engage in realistic appraisal of existing codes in an endeavor to revise them in accordance with the advances of science. To reject such tests as paternity tests on the ground that they are "not conclusive because not so declared by code," deserves the comment made by Judge McComb,[2] "to reject the new and certain for the old and uncertain does not tend to promote improvement in the administration of justice."

There is need for a greater number of both undergraduate and graduate courses in the relations of law and medicine in both law and medical schools. There is perhaps a need for more joint meetings of medical societies and bar associations so that the professions may learn from each other. From these efforts there may result an understanding which may make the following comment by Biggs[22] unnecessary:

"I am greatly troubled that so many competent lawyers have such small interest in psychiatry and fail to understand its relation to their own profession. What I have said about lawyers is true as to judges. Many judges are inclined to regard psychiatry as some form of disreputable black art. They are very, very skeptical concerning the results the psychiatrist can reach from the examinations he has made. I do not mean to imply for a moment that the judgment of the psychiatrist is to be substituted for that of the judge or for that of the jury. What I mean is that the intelligent application of the principles of psychiatry to the problem of the mentally deficient criminal defendant can be of very substantial use in enlightening both court and jury as to criminal responsibility. The law schools of the country and the lawyers and we judges have spent too little time in the adopting of techniques for improving the human race as distinguished from punishing it."

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Carcinoma of the Thyroid Gland

A Review of 106 Cases

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• In a review of 106 cases of carcinoma of the thyroid gland, it was noted that a solitary thyroid nodule is the most outstanding single physical sign in this disease. It should be investigated by biopsy of a specimen removed at operation. Patients and physicians were sometimes guilty of delay in this regard.

Papillary carcinoma involved multiple foci within the gland in at least half of the cases and there was a high incidence of regional lymph node metastasis associated with this type.

Doubt was cast on conclusions by other investigators that carcinoma of the thyroid rarely is lethal in patients less than 40 years of age.

CARCINOMA OF THE THYROID GLAND has attracted the attention of the medical profession more and more in recent years. The disease has been recognized pathologically as a carcinoma that develops as other malignant neoplasms do and causes death if uncontrolled. Many clinicians, however, are reluctant to accept this fact. They are lulled into a sense of security by the fact that course of the disease may be protracted over a period of many years. Recent long term follow-up studies are eliminating this misconception. Because biopsy of the thyroid gland is more than a minor operation, indications for this procedure need clarification and acceptance. In addition, opinions as to methods of treatment of the disease are far from unanimous.

This presentation will review 106 unselected cases in which the patients were treated at the Los Angeles County General Hospital, at Harbor General Hospital and in the private practice of one of the authors. Ninety-three of the patients were treated primarily, while 13 had had previous treatment. The purpose of the study is to shed light on a few characteristics of the disease and to suggest a rationale of treatment for papillary carcinoma.

INCIDENCE BY AGE AND SEX

Chart 1 shows the age of the patients. Unlike most cancers, which affect primarily the older age groups, cancer of the thyroid has a biphasic curve with peaks in the fourth and seventh decades. It affects females preponderantly, the ratio of females to males in this particular study being more than 4:1 (87 females, 19 males). In the older age groups, however (over 60 years), the ratio was 2.4:1 (24 women, 10 men). These findings agree with those of Sloan,[8] who also pointed out that this ratio is low in childhood too. In the present series so few of the patients were less than 20 years of age that no conclusions could be drawn in this regard.

Chart 1.—Age of patients at time of diagnosis of carcinoma of the thyroid gland (106 cases).

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PATHOLOGICAL CLASSIFICATION

Table 1 shows the incidence of various pathologic types of carcinoma in this series. For clinical purposes a relatively simple classification is used without regard to niceties of pathologic detail. In all cases in which there were elements both of follicular and papillary types histologically, the classification assigned was *papillary*, for it is the authors' convic-

TABLE 1.—*Incidence of Pathologic Types of Carcinoma in Present Series Compared with Incidence Reported by Other Investigators*

	Incidence (Per Cent) in Various Series			
	Current Series 106 Cases	Cope 190 Cases	Sloan 282 Cases	Frazell & Foote 301 Cases
Papillary	61	47	50	46
Follicular	23	24	25	7
Hurthle cell	5	0.5	5	9
Undifferentiated	6	24	20	19
Lymphoblastoma	4	0.5	....	....
Other	....	4	....	19

TABLE 2.—*Duration of Symptoms Before Diagnosis*

	Number of Cases					
	All	Papillary	Follicular	Hurthle Cell	Undifferentiated	Lymphoblastoma
Less than 6 months	23	12	5	1	3	2
6 to 12 months	10	7	2	....	....	1
1 to 3 years	27	29	5	....	2	1
3 to 5 years	6	3	1	1	1	....
5 years or more	30	16	9	3	2	....
	96	57	22	5	8	4

Unspecified: Papillary, 8; Follicular, 2.

tion that these tumors behave as papillary carcinomas. Giant cell types and small cell types were included with the undifferentiated tumors. Lymphoblastoma was included because there were four cases which clinically appeared to be primary thyroid cancer, but subsequently proved to be lymphoblastoma. The incidence of the various types in this series was compared with that in three other series in Boston and New York. In order to obtain some uniformity of classification for purposes of comparison, mixed types were considered as papillary, giant cell and small cell types as undifferentiated. There was a considerably higher incidence of the relatively benign papillary type in the present series than was reported in the eastern series. There were also considerably fewer of the malignant and undifferentiated type.

SYMPTOMS

Most patients complained of a mass in the thyroid area. About one third also complained of pressure. Only one patient had pressure symptoms without noticeable mass. Two were asymptomatic, the mass being noted on routine physical examination. Two patients sought aid because of symptoms suggesting toxicity but only one of these had thyrotoxicosis. Symptoms, however, directed attention to the gland and the necessity for exact diagnosis.

Of more interest, perhaps, than the actual symptoms is the delay from onset of symptoms to diagnosis (Table 2). It is to be noted that many patients had symptoms for more than five years before the diagnosis was made. Remarkably, two such patients had undifferentiated carcinoma. Some of the patients had sought aid from physicians during the interval before the diagnosis was made.

PHYSICAL FINDINGS

The solitary nodule was the striking physical finding among patients with thyroid carcinoma (Table 3). It was noted in approximately half of the patients. This accords with the well known relation of a solitary nodule to carcinoma. The finding of a multinodular or diffusely enlarged gland does not exclude cancer. In addition, if a nodular thyroid gland contains a dominant solitary nodule, it should be treated in a manner analogous to an undiagnosed lump in the breast—by open biopsy. In only one in five cases in the present series were there palpable cervical nodes. In six such cases the lesion was papillary carcinoma whose symptoms were first manifest by metastasis to cervical lymph nodes—the old "lateral aberrant thyroid." In cases in which the neck was normal on physical examination, symptoms developed as a result of metastatic lesions elsewhere in the body, investigation of the thyroid having been eventually brought about through study of these distant growths.

TABLE 3.—*Observations on Physical Examination*

	No. of Cases
Solitary nodule	54—with nodes 12
Multiple nodules	19—with nodes 1
Diffuse enlargement	24—with nodes 1
Mass replacing gland	6—with nodes 0
Palpable cervical nodes	19
Neck normal on physical examination	4
Dominant nodule in multinodular gland	3
Dominant nodule in diffusely enlarged gland	6
Palpable nodes only	8*

*Two had previous treatment.

TABLE 4.—*Primary Treatment*

Total thyroidectomy	25	with neck dissection	13
Total lobectomy	32	with neck dissection	6
Subtotal thyroidectomy	20		
Subtotal lobectomy (local excision of nodule)	12		
Biopsy and radiation	3		
Biopsy only	3		

PRIMARY TREATMENT

Owing to the multiplicity of the sources of the patients and to changing concepts as to proper management, there was no uniformity of methods of treatment. Table 4 shows the initial therapy that was given to these patients. Total thyroidectomy was done in only 21 instances. A subtotal lobectomy as listed in the table implies simply a local excision of the nodule. Neck dissection either limited or radical was combined with total thyroidectomy in 12 instances, and with lobectomy in six.

TABLE 5.—*Foci in Thyroid*

	Single	Multiple
Total thyroidectomy (21):		
Papillary	11	5
Follicular	0	2
Other	3	0
Subtotal thyroidectomy (47):		
Papillary	20	10
Follicular	10	0
Other	7	0

SINGLE OR MULTIPLE FOCI IN THYROID

Because there is considerable confusion as to the amount of thyroid gland which should be removed with a carcinoma, a review of the number of foci of tumor within the gland was carried out (Table 5). All cases of lymphoblastoma and 11 cases from one source where the data on this point were not available, were excluded. This study was based on routine multiple block sections and not on a large number of serial sections. All cases in which distinct multiple foci were not noted were considered as having a single focus. Even with these rigid restrictions it was immediately apparent that in about half of the cases of papillary carcinoma there were multiple foci within the gland. Russell,[6] doing whole gland serial sections to discover multiple foci, found such foci in 11 of 12 papillary carcinomas. He set forth the concept of the thyroid gland as "a large lymphatic lake with the capsule being the first limiting barrier to tumor cells. These findings strongly suggest that total thyroidectomy should be employed in the treatment of thyroid carcinoma, especially of the papillary type.

ASSOCIATED PATHOLOGIC CHANGES

Associated pathologic changes noted in the thyroid gland in cases in which the gland was removed because of carcinoma are listed in Table 6. The data were derived, of course, from cases in which enough of the gland was removed to determine whether such changes were present. The incidence of associated diseases in the glands containing carcinoma was no greater than that in the thyroid gland in the general population. These data are in agreement with those of Sloan.[8] The four cases in which the lesion seemed to arise in an adenoma, may well have been cases of carcinoma arising de nova and subsequently betraying their true nature by developing histologic criteria of malignant growth. The evidence at hand is not convincing that carcinoma is more likely to develop in a patient with nontoxic nodular goiter or any other minor thyroid abnormality than it is in the general population. In this series none of the males had associated pathologic changes in the gland. This strengthens the common opinion that a solitary nodule of the thyroid in a male is almost invariably carcinoma. These facts support the thesis that carcinoma of the thyroid arises directly from the gland itself and not from some preexisting disease within the gland.

TABLE 6.—*Associated Pathologic Changes in Thyroid Gland**

None	51
Nontoxic nodular goiter	18
Adenoma	6
Thyroiditis	4
Hypertrophy with involution	1

*No male had associated thyroid disease.

TABLE 7.—*Data on Clinical Diagnosis of Cervical Node Involvement Compared with Actual Occurrence of Involvement (Excluding Cases of Lymphoblastoma)*

	No. of Cases
Cases in which nodes were removed	28
Nodes clinically palpable	19
Nodes pathologically positive	26
Cases of papillary carcinoma	20
Nodes clinically palpable	14
Nodes pathologically positive	20

INVOLVEMENT OF NODES

Nodes were removed for pathologic study in 28 of the cases in the present series, exclusive of cases of lymphoblastoma (Table 7). In only 19 of these 28 cases had nodes been palpable clinically, although in 26 cases nodes were found to be involved. With regard to cases of papillary carcinoma only, nodes were removed in 20 cases and all the nodes contained metastastic growth, although in only 14 cases had palpable nodes been noted. Thus, in only one case of nonpapillary carcinoma was a node that was not palpable found to be histologically "positive." This accords with data set forth by Macdonald and Kotin[4] in 1953, namely, that 43 per cent of papillary carcinomas were found to have spread to cervical lymph nodes whether or not such nodes were palpable clinically. It is in agreement also with observations by Frazell and Foote[3] who found 61 per cent of nodes positive in 67 patients without palpable nodes.

METASTASIS

Table 8 shows the nature of spread of the various types of carcinomas as observed in the present series. Of the papillary type, about one third disseminated to lymph nodes, while only about one in ten infiltrated beyond the gland locally or spread to distant sites. In the case of follicular carcinomas, about one in four spread to nodes and about the same proportion to distant sites. Hurthle cell carcinomas tended to remain confined to the thyroid gland or to the local area in the neck. Not many of the undif-

TABLE 8.—*Data on Metastasis from Carcinoma of the Thyroid Gland*

	None	Local Infiltration	Nodes	Bones	Chest	Other
Papillary	34	7	20	2	6	2
Follicular	15	1	6	5	2	1
Hurthle	5	1	....	....	....	....
Undifferentiated	4	2	2	....	1	1*

*Site unspecified.

ferentiated carcinomas extended to distant sites. This is probably owing to the fact that the patient dies so early of rapid local growth of the primary lesion that there is no time for distant extension.

FOLLOW-UP

Seventy-four patients had been observed for more than one year at the time of this report. The study was not sufficiently protracted to permit drawing conclusions as to survival rate. However, it is planned to carry out a long term follow-up program with special emphasis on carcinoma of the papillary type. Cope[5] and co-workers reported a five-year survival of 43 per cent in papillary carcinoma, 35 per cent in follicular and only 11 per cent in undifferentiated. Shallow, Wagner and Colcher[7] had a five-year survival of 40 per cent among 85 patients with carcinoma of the thyroid gland who were observed for five years or more, but these investigators did not say how many cases in the series were lost to follow-up. In the present series were two patients with carcinoma of undifferentiated type who were alive more than five years after the onset of disease. These were the same two patients who had symptoms for more than two years before the diagnosis was made. Of the six patients alive with disease at the time of report, three had papillary carcinoma with recurrent neoplasm that probably would soon cause death. Apparently then, any thyroid carcinoma may eventually cause the death of the host by local growth or metastasis.

Fourteen patients died of the disease, six of them of distant metastatic lesions—in the lungs in most cases. Nine patients died of unrelated causes; four of them had thyroid carcinoma present at the time of death.

Crile[1] stated that carcinoma of the thyroid gland is rarely lethal under the age of 40 years, no matter what the histologic structure. In a study in which the period of follow-up was from three to fifteen years, he noted a mortality rate of 5 per cent under age 39, 55 per cent between ages 40 and 60, and 85 per cent over 60. Cope[5] and co-workers expressed the belief that death from thyroid cancer is extremely rare under age 39. In the present series, despite the limited period of follow-up, eight of the 23 patients who died were under 60 years of age, and in five of these eight cases death was due directly to thyroid carcinoma. One patient died of metastatic lesions at age 39. These data seem to justify skepticism of the conclusions of Crile and Cope in this regard.

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Cancer of the Thyroid Gland

Its Occurrence Among Residents of San Francisco and Alameda Counties

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• **The incidence of cancer of the thyroid gland in men was about the same in Alameda and San Francisco counties as in the country at large, but the greater incidence of the disease in women than in men was more pronounced in Alameda and San Francisco counties than elsewhere in the nation.**

In a previous study on the occurrence of cancer of the thyroid gland in the United States,[2] it was concluded that there are regional variations in the incidence of this neoplasm. The greater incidence of the disease in women than in men was most pronounced among those living in the West. The present report deals with the occurrence of cancer of the thyroid in individual metropolitan areas that participated in the survey of morbidity from cancer in the United States which was conducted by the National Cancer Institute in 1947-1948. The survey was conducted in areas selected so that the proportionate distribution of their population among the three regions—North, South and West—was the same as that of all cities of 100,000 or more population. The surveyed population amounted to 14.6 million, of whom 12.5 million were white. This communication presents in detail the data for San Francisco and Alameda counties, and for comparison, the incidence rates for other cities.

METHOD

The survey method was designed to obtain information on all or nearly all patients with cancer treated in hospitals, in clinics and in physicians' offices during a 12-month period ending in 1947 or 1948. Senior medical students were employed for abstracting hospital and clinical records. A questionnaire was mailed to every physician in the area, and personal visits were made to physicians not responding. In addition, as a partial check on the completeness of reporting, the records of local vital statistics offices were searched for information concerning deaths from cancer. It is believed that this method yielded information on practically every case of diagnosed cancer. This communication concerns the thyroid cancers diagnosed in the white resident population.

HISTOLOGIC CONFIRMATION OF CANCER

The desirability of obtaining a microscopic diagnosis* in each reported instance of cancer is beyond question. However, cases diagnosed solely on clinical grounds cannot be disregarded lest too much attention be given to the epidemiology of tissue blocks rather than to the occurrence of cancer cases. Reasonable credence can therefore be lent to trends established on the basis of analysis of all the reported neoplasms, especially if they parallel the findings of a study limited to the histologically confirmed ones.

In this material, four out of five cases of thyroid cancer were histologically "confirmed." Table 1 summarizes for each city and each sex the number of cases reported, the number for which a histologic diagnosis was available, and the age-adjusted rates based on these two sets of data. Table 2, although based on exceedingly small numbers, is nevertheless presented because of its potential usefulness in comparing eventual results of analogous investigations.

RESULTS

Table 1 shows that there is little, if any, significant variation in the incidence rates for thyroid cancer reported among the male residents of these metropolitan areas. However, because of the generally low incidence of this kind of cancer in males, one year's experience is insufficient to demonstrate beyond reasonable doubt that there is no regional variations among men. All that can be said is that these data provide no evidence suggesting greater incidence in men of one geographic region than in those of another. On the other hand, the number of cases recorded among females in that one year period is large enough to provide for more reliable conclusions. It can be seen that the incidence varied considerably in the 11 areas surveyed—from a low

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*A "validated" microscopic diagnosis would be still more useful, since the histologic criteria for "papillary adenocarcinoma" of the thyroid gland are not precise.—Editor.

TABLE 1.—*Number of Newly Reported Cases of Cancer of the Thyroid and Incidence Rates per 100,000 White Population of Eleven Selected Areas of the United States, 1947-1948*

	Males				Females			
	All Cases		Microscopically Confirmed		All Cases		Microscopically Confirmed	
	Number of Cases	Age-adjusted Incidence Rate*	Number of Cases	Age-adjusted Incidence Rate*	Number of Cases	Age-adjusted Incidence Rate*	Number of Cases	Age-adjusted Incidence Rate*
San Francisco	6	1.6	3	0.8	28	7.2	24	6.3
Alameda	6	1.9	6	1.9	27	7.8	24	6.7
Denver	3	1.3	2	0.9	9	3.4	6	2.3
Chicago	17	0.8	12	0.6	43	2.0	32	1.5
Detroit	14	1.2	11	1.0	25	2.7	20	2.1
Pittsburgh	9	1.3	6	0.9	22	3.0	18	2.5
Philadelphia	18	2.0	15	1.7	52	5.3	43	4.4
Atlanta	1	0.5	1	0.5	6	2.1	6	2.1
New Orleans	0	—	0	—	7	3.2	2	0.9
Dallas	0	—	0	—	6	2.6	6	2.6
Birmingham	0	—	0	—	7	4.2	6	3.6

*Adjusted to the 1950 United States population.

of 2 cases per 100,000 population in Chicago to 7.8 per 100,000 in Alameda County. It is further noted that while the agreement is not exact, there is also a general correlation between all cases recorded and those which were histologically confirmed. Among the surveyed cities, the highest rates were recorded in Alameda and San Francisco counties, and the next highest rate—5.3 in Philadelphia—was significantly lower than either.

It could be argued that there is more "thyroid consciousness" in an area where a keen interest in this gland has for a long time been stimulated by the fact that a number of nationally prominent investigators work there. However, the occurrence of thyroid cancer among the male residents of San Francisco and Alameda is not out of line with that in the rest of the surveyed areas—and it seems unlikely that the physicians in the area would have their increased awareness limited to one sex.

It would be interesting and informative to see whether additional studies based on all cases of thyroid cancer recorded in these communities, for a longer period, confirmed the points derived from this study of a single year's experience.* With regard to San Francisco, Alexander[1] found that an annual average of 26 histologically confirmed cancers of the thyroid had been newly diagnosed during the four-year period 1950-1953.* This accords with

*The reliability of the histopathological diagnoses of "papillary carcinoma" in both series of cases might be tested by submitting random samples of the slides to a committee of pathologists expert in this difficult field.—Editor.

TABLE 2.—*Number of Newly Reported Cases of Thyroid Cancer, White Population of San Francisco and Alameda Counties, 1947*

	San Francisco		Alameda	
	Males	Females	Males	Females
All ages	6	28	6	27
0 to 14	0	1	0	0
15 to 24	1	1	2	2
25 to 34	0	6	1	4
35 to 44	0	12*	1	7
45 to 56	0	4	1	1*
55 to 64	2*	0	0	1
65 to 74	1	3†	1	5*
75 and over	1*	1*	0	1
Unknown	1*	0	0	6*

*Includes one case not microscopically confirmed.
†Includes two cases not microscopically confirmed.

the 27 histologically confirmed cases of thyroid cancer recorded in San Francisco for both sexes during the 12 months of the 1947 survey. However, an exact comparison between Alexander's data and the data here supplied cannot be made, since Alexander did not provide the necessary details regarding the age and sex of patients.

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Control of Diarrheal Diseases in California State Hospitals for Retarded Children

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• **The three California state hospitals for mentally retarded persons have been having a severe problem with amebic and bacillary dysentery and with other infectious diseases of the gastrointestinal tract. At Sonoma, the oldest of these hospitals, this problem is known to have existed for many years. Improved medical and nursing staffing and the use of antibiotics and other effective drugs developed in recent years have greatly lowered morbidity and mortality rates in these institutions. However, in themselves these measures have not been effective in lowering the incidence of infection.**

Studies have demonstrated that mass treatment of cottage groups known to have a high incidence of amebic infection has resulted in control of this disease where such mass treatment was followed by adequate laboratory follow-up, with isolation and retreatment of treatment failures. Where mass treatment of such groups has been carried out without such laboratory follow-up, there was a rapid return to the previous high incidence of infection.

Statistics show that these diseases are a serious threat to employees working in these institutions. Increasing attention is being paid to the potential threat to the surrounding communities and the state as a whole from the focus of infection present in these hospitals.

THREE OF THE HOSPITALS under the supervision of the California State Department of Mental Hygiene —Sonoma State Hospital near Sonoma, Pacific State Hospital near Pomona and Porterville State Hospital near Porterville—are solely for the care of mentally retarded patients. Half of the population in these hospitals is under 18 years of age. Most of the patients are so retarded as to be unable to learn even the rudiments of personal hygiene, and many are incontinent of feces. A further complicating factor in this lack of personal hygiene is overcrowding of patients in cottages and in general buildings. Furthermore, since budget limitations permit no more than minimal attendant and nursing help, the help of patients must be used in nursing care and in the handling of food, in spite of their inability to learn the basic elements of sanitation. This combination of circumstances provides an epidemiologically deplorable environment for stool-to-mouth spread of infections.

In the past five years there have been major outbreaks of amebiasis, shigellosis, salmonellosis, infectious hepatitis and food poisoning in these three hospitals. Dwarf tapeworm infestation and trichuriasis are currently endemic in one or more of the hospitals, and amebiasis, shigellosis and giardiasis are endemic or epidemic in all of them.

Six hundred and eighty cases of amebiasis—an infection incidence of a little more than 10 per cent of the combined average population of the three hospitals for that year—was reported by the three hospitals for the year 1954. This number of cases was greater than from the remainder of the state. In the same year, 105 cases of shigellosis and 107 cases of giardiasis were reported.[2] Nine per cent of all the cases of shigellosis reported in California during this same year were reported from the three hospitals—a very significant figure when it is realized that it comes from a group of less than 7,000 of a total state population for that year of 12 million.

Further evidence of the extent of the problem has been shown by various surveys. At Sonoma in 1953, of 100 children in an infirmary for chronic bedridden patients, 38 had amebiasis. The diagnosis was made on the basis of three wet mount stool examinations from each patient by a competent parasitologist,[1] with confirmation of positive stool specimens on iron hematoxylin stained slides. Nine of the 38 children had frank dysentery with diarrhea, discharge of mucus and hyperactive peristalsis, and had either blood in the stools or the motile form of *Endameba histolytica*, or both. Eight other children at the time of diagnosis had diarrhea, with hyperactive peristalsis and appeared ill but did not pass gross blood or trophozoites of *E. histolytica* in stools. In seven others there was evidence of chronic amebiasis with associated malnutrition and recurrent bouts of diarrhea over several months preceding the survey. The remaining 14 children were asymptomatic and were classified as cyst passers.

In the same year at Sonoma in a cottage of 115 preadolescent and adolescent boys, a 53 per cent

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infection rate with *E. histolytica* was shown to exist, following examination of at least three stool specimens.[8] Wet films, concentration of those which were negative on wet mount, and iron-hematoxylin staining methods were used in this study in order to assure the best sensitivity and accuracy of diagnosis.

A laboratory and epidemiological survey was conducted at Pacific State Hospital in December 1953 and January 1954 by the State Department of Public Health and the Los Angeles County Health Department.[3] Two cottages which housed a total of 245 young children were surveyed. A single stool specimen from each, as well as a culture by rectal swab, revealed the prevalence rate for *Shigella sonnei* to be 3.7 per cent and *E. histolytica* 40.5 per cent. Undoubtedly, if additional parasitological and cultural examinations had been done a higher incidence would have been reported.

In February and March of 1956, 43 per cent of the patients who worked as food handlers in the central kitchen at Sonoma had amebae in fecal specimens. Eight out of the 12 patients who prepared vegetables were found to be infected.

HISTORY

Sonoma State Hospital, the first California state institution for the mentally retarded, was built on its present site in 1891. Pacific State Hospital was founded in 1927 and Porterville State Hospital in 1953. It is not known how long the specific dysenteries have been a problem at Sonoma, but old hospital records show that in the late 1800s there were many diagnoses of "acute intestinal intoxication," which may have been cases of shigellosis.

In 1937 a stool specimen from a patient with particularly severe dysentery was sent from Sonoma State Hospital to the State Bacteriology Laboratory and was proved positive for *Shigella flexneri*. This was the first laboratory proved case of a specific dysentery in any of these hospitals. During 1937-1938, the State Department of Public Health conducted periodic surveys at Sonoma. Between July 1937 and December 1938, there were 262 cases of bacillary dysentery at this hospital, 17 of them fatal.[4] One of the ensuing recommendations made by the state health department was that a bacteriologist be added to the permanent staff at Sonoma. In 1941, a well trained bacteriologist and parasitologist was employed and soon afterward *E. histolytica* as well as *Shigella flexneri* were reported[7] at the hospital. Proved amebiasis at Sonoma can, therefore, be dated back to 1941.

Porterville State Hospital admitted its first patients in 1953 as transfers from other state hospitals. Morbidity rates from amebic and bacillary dysentery have been high there almost from the day it opened.[6]

CONTROLLED EXPERIMENTS

Experiment 1: At Sonoma in the five-year period 1950-1954 inclusive, an attempt was made to strictly isolate and treat all patients with symptomatic amebiasis and shigellosis, and to observe treated patients for a six-month period. Nursing service personnel were instructed to submit specimens to the laboratory from any patient who had diarrhea or blood in the stool. Staff physicians were alerted to submit fecal specimens from any patient whom they suspected of having chronic or acute amebiasis or shigellosis. Fresh specimens were examined in saline solution on iodine plus eosin stained wet mounts, and also were cultured on Salmonella-Shigella media. Suspicious colonies on this media were identified by sugar reactions and agglutination with group-specific sera.

Those patients who were found to have amebiasis or shigellosis were admitted to the isolation ward of the hospital or were isolated in their own cottages when hospital beds were unavailable. Over the five-year period the treatment regimens used were those which were considered most adequate at the time. The sulfonamide group of drugs, tetracyclines and polymyxin by mouth were used for shigellosis. Arsenicals, diodoquin and various antibiotics—singly or in combination—were used for amebiasis. The efficacy of some of these treatment regimens has been reported elsewhere.[1,5,8,9] Patients remained in isolation for the duration of the treatment period and until two post-treatment stool examinations were negative for organisms. Following release from isolation, stool specimens were examined weekly for six weeks and thereafter monthly for six months. On recurrence or reinfection the treatment and follow-up schedule was repeated.

The results of this experiment indicated a steady decline in the incidence of shigellosis (220 cases in 1950 to 37 cases in 1954). However, in spite of these measures, there was an increasing rate of amebiasis (70 cases in 1950 to 385 in 1954). Uncontrolled variables during this period were: Increased nursing staff and improved laboratory services.

Experiment 2: At various times since 1950 epidemics of acute shigellosis or acute amebiasis have occurred in single cottages. Symptomatic cases appear suddenly, with 20 per cent or more of the persons in a cottage becoming ill. Several of these outbreaks were dealt with by mass treatment of all persons in the cottage, but laboratory follow-up studies to determine whether treatment failed in individual cases was not carried out. In all instances, good control of the symptomatic outbreak was obtained. The case rate fell to unusually low levels for a period of two to three months, but six months later was again at the usual level.

Experiment 3: In two episodes of acute outbreak

of amebic disease as described in Experiment 2, mass treatment was used and in addition there was laboratory follow-up to determine the cases in which infection continued. In one episode, ten specimens from each patient obtained at intervals in a three-month period following mass treatment were examined. Resistant cases were retreated with another drug. The cottage was essentially free of amebic infection during this three month period and for six months thereafter; then the case rate again rose.[1]

In another episode following mass treatment, three stool specimens a month were checked over a six-month period. In this instance the cottage was apparently cleared of amebic infection by the end of the six-month period, but nine months after the end of the six-month period of laboratory control, clinical cases of amebiasis again began to appear.[8]

HAZARD TO EMPLOYEES AND COMMUNITY

Continued morbidity among the patients represents only one of the epidemiologic aspects of these enteric infections. Questions as to the hazard to the employees and the possibility of transmission to and from the institution and the community have not as yet been thoroughly explored. From observations made during investigations by the State Department of Public Health, reports from the State Personnel Board on sick leave taken by personnel, and disabling injury reports from the Department of Industrial Relations it is inferred that the risk is not limited to the patients. Occasional cases of dysentery are known to have occurred among employees of the three state hospitals for the mentally retarded during the years 1950 to 1955. During the 12 months ended June 30, 1954, 95 of the 2,067 employees at Sonoma, Pacific and Porterville state hospitals received compensation for infections transmitted by fecal-oral route (7 cases of amebiasis and 88 cases of infectious hepatitis). Recently there was a sudden outbreak of amebiasis among employees at Sonoma, 27 cases during the first three months of 1956.

The threat from the foci of infection in these hospitals to the community outside of the hospital has not been confirmed by laboratory or epidemiologic studies. Some families have volunteered the information that diarrhea occurred among their members during or following a visit home by their mentally retarded child. Employees have also suspected that they have been the source of enteric illnesses noted in their families. Asymptomatic carriers discharged from the hospital to their own home. to a foster home or to a vocational placement could be potential sources of spread of these diseases.

Transmission of infection from the employee to the patient or from the community to the hospital is a possibility, although there is not very much factual data as to the severity of this threat.

To improve the general level of sanitation is the most basic control measure for diarrheal disease and, perhaps, the only one which will be effective. This will require increased and better trained staffs, particularly within the nursing services. To reach a level of staffing which would permit dispensing with the services of patients in food service areas and in the direct care of sick patients seems essential.

Mass treatment of the entire population of these institutions has been suggested as a relatively inexpensive way to control amebic and bacillary dysentery. On the basis of mass treatment experiments in single cottages, the authors believe that such a program would not succeed. Mass treatment, if followed by sufficient laboratory studies to discover cases in which treatment failed, seems to offer hope of controlling the present situation. If continuing laboratory and clinical surveillance was carefully maintained, it might be possible to eradicate dysentery from these hospitals.

Improved case finding, with individual treatment of carriers and of patients with clinical cases, would not be successful as a control means for amebiasis at this time, because of the present widespread distribution of infection.

So far, efforts to control the enteric infections in the state hospitals for mentally retarded persons have been centered on the impact of these diseases on the patient. This limited approach has pointed to the futility of attacking only part of a problem and attempting to resolve it with inadequate facilities and personnel. The interrelationship of the community, the employee and the patient in maintaining and disseminating these enteric infections must be defined. This requires a well planned coordinated study of the whole problem, conducted by a team of qualified personnel from the fields of medicine, microbiology and public health.

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Parent Development

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• Today's parents tend to be overwhelmed with advice from many sources. In his role as family counselor, the pediatrician must understand and consider the emotional development of parents in relation to their child's development; otherwise, his advice and counsel do not "take" and he becomes tired and frustrated and angry.

Parents progress through definite stages of development: Stage 1: *Learning the cues*—the struggle of the parents to interpret the infant's needs. Stage 2: *Learning to accept growth and development*—the parent learning to accept some loss of control of the toddler. Stage 3: *Learning to separate*—the parent learning to allow the child to develop independently. Stage 4: *Learning to accept rejection, without deserting*—the struggle of the parents not to intrude and yet to be there when needed. Stage 5: *Learning to build a new life having been thoroughly discredited by one's teenager*—the parent learning to live independently while the teenager struggles to develop his own identity.

The pediatrician who is accepting, sensitive and a good listener and who keeps in mind that parents as well as children have capacities for growth and development, will be a potent factor in promoting good parent-child relationships and many times more effective in dealing with the child in health and disease.

PEDIATRICIANS have three primary tasks: To treat children when they are ill, to keep children physically and mentally healthy, and to promote healthy parent-child relationships.[1,3,6,7] The American Board of Pediatrics, recognizing that a practicing pediatrician can no longer be merely a specialist in the diseases of childhood, has for many years insisted that the essentials of child growth and development be emphasized in pediatric specialty training.

But children are not the only members of the family who grow. Mothers and fathers also progress through definite stages of development as parents. A pediatrician, often working more closely with the parents than with the child, must consider parental emotional development. Otherwise his efforts to help a child medically may be frustrated by his inability to work successfully with the mother and father.

Even if he recognizes the successive stages of development in relation to their child through which the adults must pass, the pediatrician may be unable to help for want of skill in counseling. The day has passed when a physician may hope to give advice and have it reverently obeyed by the majority of his patients. Parents are inundated with advice from innumerable sources, and many have become either bewildered or immune. Pediatric advice, although well-intentioned and sound, may bring about totally unexpected and undesirable results.

Skill in aiding parent development depends upon two factors, a knowledge of the stages of normal emotional growth through which the parents must progress, and an ability to encourage the parents' insight into their problems by expert listening and observation.[3,7] In the simplest terms, the pediatrician must learn to advise less and to listen more.

Normally, parents pass through at least four, and probably five stages of emotional growth and cognition. Each stage reflects the major problems in the child's development[1,6,7,8,9] with which the parent is grappling. The stages are not rigidly defined. One does not terminate when another begins, and the mother or father who has progressed to a later stage may still be working on problems held over from earlier periods. Early development lays the groundwork for the later phases when child and parent are more mature. Because the stages only have meaning if considered in relation to the child's development, parents go through the same stages with each child, although parental experience may modify the stages to some extent.

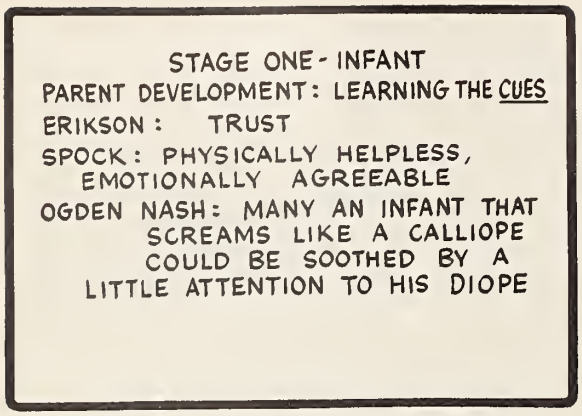
Presented before the Section on Pediatrics at the 85th Annual Meeting of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

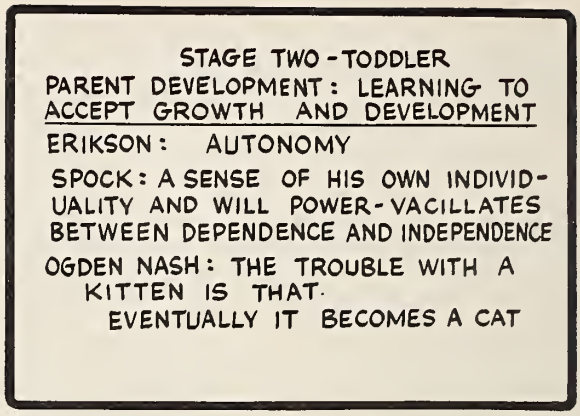
1. Learning the cues

Many an infant that screams like a calliope
Could be soothed by a little attention to his diope.
OGDEN NASH

During the earliest months of their baby's life, the parents' most bewildering problem is to find out what the baby is trying to tell them. The infant is completely dependent upon them for his relatively simple needs—food, fondling, physical care. Spock[9] commented that an infant is "physically helpless and emotionally agreeable." Throughout this phase, which Erikson[2] calls the period of "trust," he needs to establish confidence in his mother and in his environment. This trust will provide the foundation for his further development.

Despite earnest effort, parents often remain unable to interpret the individual cues by which the baby tries to express his needs.[10] Does he cry because he is hungry, tired, wet, or spoiled? They also have lingering doubts about the infant's physical





status. The pediatrician may become frustrated or angry because the parents do not accept his reassurance or because they reject his advice regarding the technique of handling the child. If he keeps in mind, however, that the parents are in the stage of "learning the cues," he may see that the parents *cannot* carry out his suggestions because they have not yet mastered their first lesson. For example:

The mother of a six-month-old infant became extremely perturbed because the child screamed constantly. Two former pediatricians had suggested numerous techniques; she had tried to apply them, but the baby continued to cry.

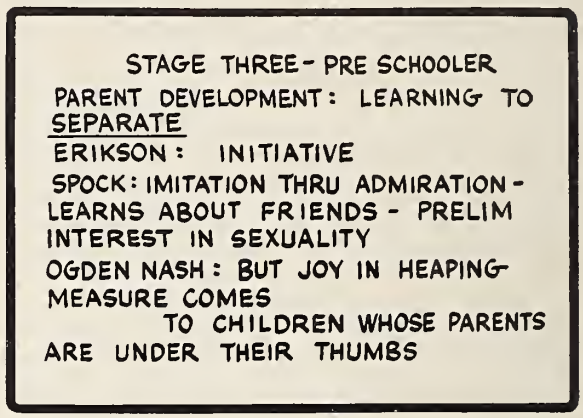
The young woman was encouraged to talk about the problem as she saw it. She said: "My sister lives with us. She has a job and helps support us. She has always done everything better than I. When she holds the baby, he never cries; so I let her take care of him whenever I can." Jealousy of the sister was evident in her tone. When she had finished telling her story, she got up without waiting for the baby to be examined, expressed her thanks, and marched out of the office. A month later she returned. Laughingly, she explained that she had gone home, "told her sister off" and started taking care of the baby herself. The child had stopped crying except when hungry or uncomfortable.

This mother had been blocked from "learning the cues" because she had carried over into her relationship with her child, her negative feelings regarding her sister. Insight into those feelings helped her to develop a good relationship with her baby and to meet his needs more adequately.

2. Learning to accept growth and development

The trouble with a kitten is that
Eventually it becomes a cat.
OGDEN NASH

The parents of the toddler can no longer exert omnipotent control over their offspring. Although he continues to need love and attention from them, the toddler has gained motility and begins to assert his



independence. Spock[9] spoke of "a sense of his own individuality and will power" and "vacillation between dependence and independence." Erikson[2] called this the period of "autonomy," since it represents the earliest development of self-reliance and self-control. Many parents who "just love babies" find it difficult or impossible to tolerate the toddler, who is "so cute, but—!"

Again, the pediatrician may find that to discuss the youngster's "feeding problem" and "bad sleep patterns" is futile as long as he concentrates solely upon the growing child's needs. His suggestions may be more fruitful if, before offering them, he considers that the parents are being called upon to enter a new phase of maturity. They must learn to accept the growth of their child, and they need help in adapting to the child at his new developmental level.

The mother of a two-year-old boy complained that he would not eat, that he got into everything, and that spanking did not help. She was reassured that all children go through this stage but she appeared unimpressed. A few weeks later she returned, pleading that the child be given a sedative. In response to a suggestion that she talk over her background and experiences, she said that she had been the older of two children and had always felt that

her young brother was the favored child. He had grown into a ne'er-do-well. She blamed her mother for having spoiled him.

Her projection of this disturbed relationship into her concern for her child's behavior and into her own inability to control it, was obvious. At the end of the visit she forgot to repeat her request for sedation. During subsequent visits, discussions of the "terrible two" were continued. The insight gained by both mother and pediatrician seemed to help her through this second stage of parent development.

3. Learning to separate

But joy in heaping measure comes
To children whose parents are under their thumbs.
OGDEN NASH

We are accustomed to speak of the separation anxiety of the two-year-old child as he approaches the outside world and friendships. The separation is equally difficult for the parents. Mothers and fathers are told that they must allow the child to assert himself, to explore, to show initiative; at the same time, they are told that they must set limits. Understandably, the parent asks: "How do I encourage initiative in my child? Must I let him wreck my home? If not, then what do you mean by 'sensible limits'?"

The preschool child has gained considerable motility. He develops positive feelings toward his parents and parent-substitutes. Spock[8] spoke of the child's "imitation through admiration." The preschool child has an active phantasy life, and fears are a common phenomenon; but he gains functional pleasure through mastery. Erikson[2] called this the stage of "initiative." The parent can cope with this new phase in the child's development only if he himself learns to accept separation.

The mother of a girl two and a half years of age complained that the child was demanding, high-strung and clinging, and that she had frequent tantrums. A pediatrician had told her that the youngster needed to have firm limits set for her; but the mother commented, "I never give in to her tantrums. Still she screams whenever she's thwarted, and she still clings to me all the time." The child appeared to be a happy, outgoing little girl.

In further conversation, the mother revealed early feelings of resentment toward the child, whom she had not wanted. Her sense of guilt regarding this resentment led her to overcompensate, so that she was unable either to set limits or to allow the child to separate from her and develop independently.

Here again, pediatric advice had fallen short. Yet, when the mother was given an opportunity to air her feelings in even a brief discussion, she seemed to gain considerable insight. The problem which had appeared to be the child's, she now saw as her own. Within a few weeks, she reported that the tantrums and clinging behavior had ceased. Improvement in the child had proved impossible until the mother had achieved the third stage in parent development, the ability to separate.

STAGE FOUR - SCHOOL AGER
PARENT DEVELOPMENT: LEARNING TO ACCEPT REJECTION---WITHOUT DESERTING
ERIKSON: INDUSTRY
SPOCK: FITTING INTO OUTSIDE GROUP. INDEPENDENCE OF PARENTS AND STANDARDS - DEVELOPING CONSCIENCE - NEED TO CONTROL AND MAKE MORAL
OGDEN NASH: CHILDREN AREN'T HAPPY WITH NOTHING TO IGNORE
AND THAT'S WHAT PARENTS WERE CREATED FOR

4. Learning to accept rejection, without deserting

Children aren't happy with nothing to ignore
And that's what parents were created for.
OGDEN NASH

The parents of a child of school age must learn to accept what may seem to them to be total rejection by their offspring. On entering school, the boy or girl begins to manifest overt independence of his parents and their standards. Spock[9] described the "middle-aged child's" efforts to fit into the outside group and to move away from his parents. He mentioned the child's strict conscience, his attempts to control and to make moral his aggressive and sexual drives. Piaget[4] delineated the ways in which the social life of children gives rise to an inner discipline. Erikson[2] termed this the stage of "industry or work completion." At this stage the child learns to win recognition by producing things.

Parents react to the child's declaration of independence in a variety of ways. They may feel hurt, disappointed or angry even to the point of deserting the youngster. Despite his appearance of self-assertiveness, the middle-aged boy or girl still needs plenty of parental support; but the support must be given unobtrusively, without heckling, and it must be accompanied by respect for the child's feelings and his pride.

The mother of an eight-year-old girl stated that the child was withdrawn, unhappy, and hostile to her sister. Attempts to counsel this mother in the usual way, with reassurance, discussion of sibling rivalry and the emotional climate in the home, failed miserably. When, a few months later, the mother returned for a second visit with the same complaints, a new approach was tried. The pediatrician stopped advising and listened. As she talked, they both began to realize that she was deeply hurt by her daugh-

ter's seeming rejection. The woman, who had never had a good relationship with her own mother, prided herself on the wonderful relationship she had built up with this child. The previous reassurance that she had received regarding the emotional pattern of her daughter's age group took on new meaning for her. A few months later she reported that her daughter had "blossomed forth"; and although the child continued to be jealous of her sister, the mother now felt able to cope with her difficulty.

This mother was able to work out the fourth stage of parent development with little help, because she had mastered the earlier stages.

5. Learning to build a new life

> **O adolescence!*
> *I'd like to be present I must confess*
> *When thine own adolescents adolesce!*
> OGDEN NASH

There is probably a fifth stage of parent development. Facetiously, we may call it *learning to build a new life, having been thoroughly discredited by one's teenager.* Erikson[2] wrote of the adolescent's problem as one of "identity versus role diffusion"—the struggle of the teenager to find himself. The antics and actions of the teenager as he struggles to develop a sense of ego identity may seem irrational to adults, and may be hard on parents. Redl[5] described the adolescent as "peer oriented" but with a keen sense of fair play; Redl counseled parents to confine any necessary conflict to specific and major issues at hand; and he urged them to respect the feelings of the young people and to avoid constant criticism because it undermines morale and relationships.

This phase, like the preceding ones, calls for a new stage of parental development. The pediatrician has an opportunity to stress, in his discussion with the parents of adolescents, that the period has positive values for the adults as well as for their children. The mother and father now have the opportunity to rebuild their own lives, more or less independently of their children. To the extent that they achieve this positive outlook, they may become more tolerant of their offspring's behavior. The parent who has mastered the fifth stage of development does not intrude upon his son or daughter, but stays quietly in the background, ready to give support and help as they are needed.

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STAGE FIVE - TEEN-AGER
PARENT DEVELOPMENT: LEARNING TO BUILD A NEW LIFE HAVING BEEN THOROUGHLY DISCREDITED BY ONE'S TEEN AGER
ERIKSON: IDENTITY
REDL: CONFLICT TO BE CONFINED TO SPECIFIC AND MAJOR ISSUES AT HAND - PEER ORIENTATION AND FAIR PLAY
OGDEN NASH: O ADOLESCENCE! --I'D LIKE TO BE PRESENT I MUST CONFESS WHEN THINE OWN ADOLESCENTS ADOLESCE!

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Intracardiac Operations

Use of a Mechanical Pump Oxygenator

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• **Cardiac operations under direct vision, employing extracorporeal circulation for heart-lung by-pass, are dependent for success on two major factors: (1) The use of an apparatus capable of maintaining optimal blood flow without toxifying the blood during its extracorporeal circuit, and (2) The ability of the surgeon to correctly assay the defect or defects during cardiotomy and correct them by suitable reparative techniques. Although perfection has by no means been achieved in either of these fields, much progress has been made to date in both. It remains for the repeated clinical application of the method in suitably selected cases to eventually make it a standardized operative procedure.**

IT HAS LONG been recognized that the performance of certain types of cardiac operations under direct vision would be dependent upon the functional exclusion of the heart and lungs by some mechanical apparatus. The pioneer work of Gibbon,[2] who in 1939 accomplished the first successful total by-pass of the heart and lungs in a cat, was followed by a wealth of experimental procedures of similar nature. The transfer, however, of laboratory knowledge and experience to clinical cases has been fraught with many difficulties, and progress has been slow. Nevertheless in the last two or three years the clinical application of extracorporeal circulation during the performance of surgical operations within the open heart has been brought to fruition. Successful clinical cases are being reported from an increasing number of centers.[1,3]

The varieties of "heart-lung" machines in use today have in common the following features. Venous blood is withdrawn from the patient by cannulation of the superior and inferior vena cavae, usually via the right auricle. The azygos vein is tied and the cavae are occluded during the perfusion, the venous blood being diverted to the oxygenating apparatus. The only blood then within the heart chambers is that reaching it through the coronary circulation via the coronary sinus or through the Thebesian system of veins. Following oxygenation the blood is pumped back into the patient's aorta, usually through a cannula in the left subclavian artery, thus maintaining cerebral, systemic and coronary perfusion with oxygenated blood. The heart is excluded from the circulation except for the perfusion of its own coronary system. Operation under direct vision on the relatively bloodless field is then feasible. Coronary sinus and Thebesian vein blood in the operative field is removed by suction.

Major variations in the machines pertain to methods of oxygenation and gas exchange, rates of flow of blood, methods of pumping and methods for preventing embolization of gases and/or particulate matter. Ancillary factors such as control of pH, temperature regulating, defoaming methods, and anticoagulation measures are other points of variation.[5]

Although superficially it would seem that the simpler the apparatus the better, experience has shown that pump oxygenators of the simpler types may fail to meet the demands in exigent cases. An apparatus used for the maintenance of extracorporeal circulation must be able to deliver adequate quantities of well oxygenated blood without rendering the blood toxic. It should have a relatively simple blood circuit, the mechanical parts of which function with a minimum of operational difficulty. Finally there should be a flexible controllability of physiologic variables, such as pH, venous and arterial pressure and temperature.

The machine used at the Institute for Medical Research, Cedars of Lebanon Hospital, was designed with these principles in mind.[4] It incorporates some of the features of previously described machines and adds some new ones. It is designed to deliver up to 4,500 cc. of arterialized blood per minute. This maximum flow rate has been successfully tested on a cow, and a flow rate of 2,500 cc. per minute has been used clinically.

Oxygenation is achieved by the Waud principle, in which the stream of venous blood from the patient is broken up into a shower of drops by a perforated

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From the Department of Surgery and the Institute for Medical Research, Cedars of Lebanon Hospital, Los Angeles.

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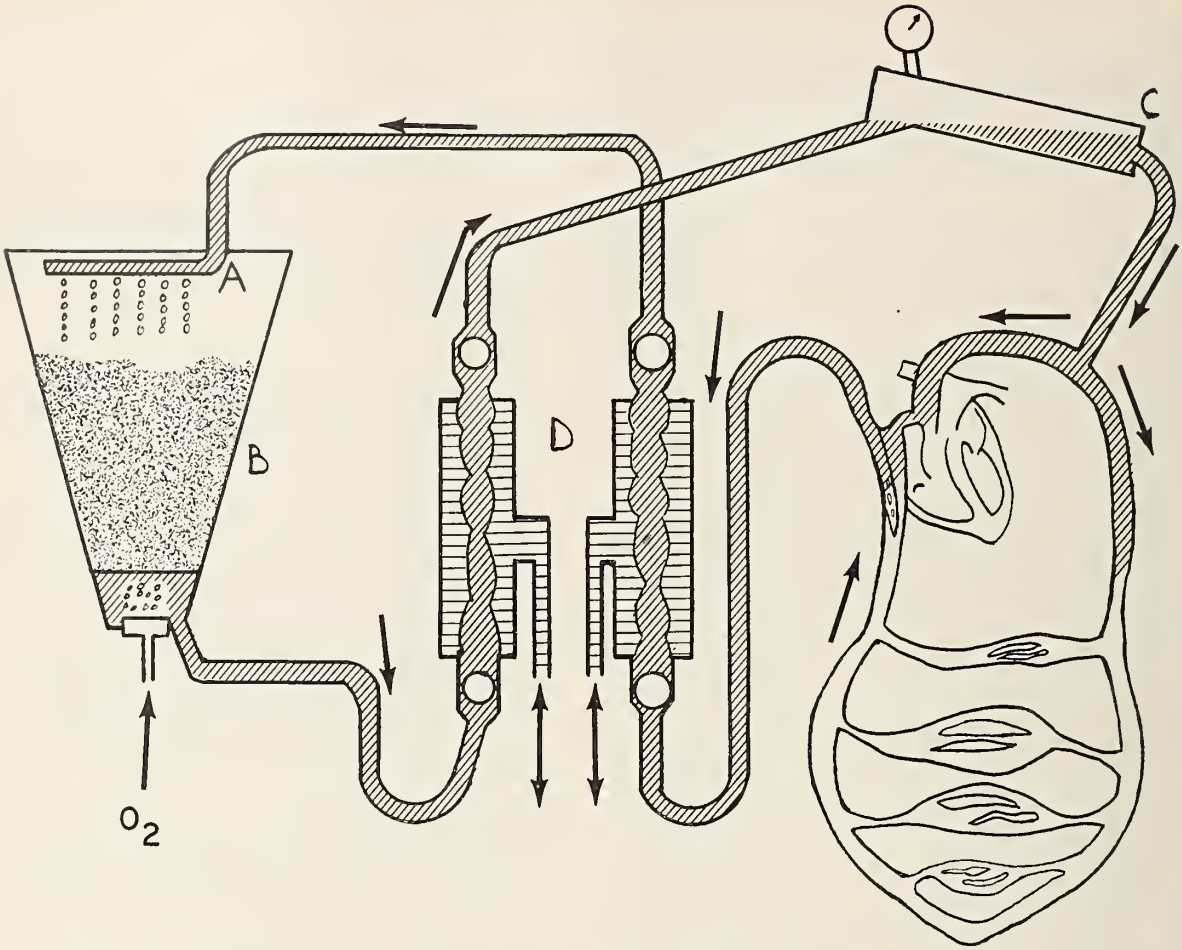

Schematic representation of mechanical pump oxygenator: (A) Perforated teflon spiral. (B) Oxygenating chamber. (C) Bubble trap. (D) Pumps.

teflon spiral (see A in diagram). The venous blood cascades upon a cushion of constantly renewed blood-oxygen foam in a cone-shaped container (B in diagram), where the gas exchanges take place. By this means 95 to 100 per cent oxygenation is readily achieved and the pH of the blood is effectively kept within the normal range.

To obviate air embolism, small bubbles are removed in a specially designed bubble trap (C in diagram). The pH is continuously monitored and necessary corrections can be made by variation in the gas mixture or changes in the perfusion rate. A constant registration of arterial pressure is maintained. Occasional periods of hypotension are corrected by increasing the perfusion rate or at times by the addition of pressor agents. The coronary sinus blood is not considered toxic and is continually returned to the venous line for recirculation. Temperature adjustment has not been considered necessary to date, but such adjustment could easily be made by placing warming tapes around the oxygenating cone.

The pumps corresponding to the ventricles (D in diagram) that are employed for movement of the blood column, consist of large bore silicone rubber tubes mounted within glass tubes. Alternate injection and withdrawal of water in the glass jacket alternately compresses and expands the inner rubber tube containing the blood column. Ball valve devices at either end control the directional flow. This kind of pump is considered less traumatic than many currently employed. Studies of the formed blood elements and plasma hemoglobin before and after perfusion have borne out this belief. In dogs the plasma hemoglobin increases at the rate of 1 mg. per 100 cc. per minute.

To insure maintenance of a constant blood volume in the extracorporeal circuit, as well as in the patient, an automatic nonelectronic blood level control is used. This serves to keep the amount of blood within the machine constant within 20 cc. Two thousand cubic centimeters of blood is required for priming the machine and the extracorporeal circuit.

The rate of perfusion may be easily altered by

either increasing the stroke volume or the frequency in the pumping mechanism.

Coagulability of the blood is controlled with the use of heparin in the dosage of 2.2 mg. per kilogram (2.5 pounds) of body weight. Only fresh heparinized blood is used for perfusion. The problems attendant upon obtaining an average of 5.000 cc. of freshly drawn compatible blood for every patient are considerable, but no simpler method seems feasible at present. Experimental use of citrated blood has proved it unsatisfactory for this purpose.

Once the machine is connected, operation is automatic and, in most instances, self adjusting, except for the required variations in perfusion rate, compensations for loss of blood, adjustment of pH and similar variables.

The oxygenating unit and blood circuit units are easily autoclaved.

In experiments with dogs, using the apparatus described, right ventriculotomy was done on 25 subjects with the creation and repair of interventricular septal defects, the heart routinely being kept open for 30 minutes. Twenty-three of the dogs survived.

The physiological principles and experimental effects of direct exposure of the aortic valve through aortotomy in the cross clamped aorta were studied also. This was done by two methods. In the first, "reverse" coronary perfusion was maintained through a cannula inserted in the coronary sinus, delivering oxygenated blood to the major portion of the myocardium. (With this method a portion of the right ventricle is not perfused due to the absence of coronary veins on the right.) By the second method, complete cardiac standstill was induced chemically, the aorta was cross-clamped, aortotomy was done without coronary perfusion for periods of up to 30 minutes.

In all cases (15 animals), effective spontaneous circulation was reestablished and some of the animals survived.

At Cedars of Lebanon Hospital the machine was used clinically in three cases. None of them terminated successfully, yet it was felt that the performance of the machine was entirely satisfactory in all three cases. The authors now recognize that in the first case, that of a 26-year-old patient with congenital pulmonic stenosis, the hemodynamic changes induced by the very correction of the defect were incompatible with life. The sudden increase in pulmonary arterial pressure resulted in a massive, hemorrhagic pulmonary edema, causing death. In the second and third cases (high interventricular septal defect), technical difficulties in the performance of the operation could not be overcome and structural abnormalities incompatible with life either remained or were created. Yet while the patients were connected with the machine, the circulation was adequately maintained. One patient survived 12 hours after total cardiopulmonary by-pass lasting 50 minutes with the heart being open for 32 minutes.

To date the most successful and dramatic clinical application of heart-lung machines have been in the field of congenital cardiac malformations. Interventricular septal defect in particular has been reported successfully dealt with by open cardiac operations while the patient was sustained by mechanical circulation. In the surgical field there remains for exploration the vast field of coronary artery operations, operations on the ascending aorta and aortic arch, and operations on the valves requiring direct vision, particularly operations to overcome valvular insufficiency. Even though many of the difficulties of the mechanical apparatus have now been surmounted, the technical aspects associated with the operation alone still remain a grave problem. The training ground is unfortunately a highly limited area within a diseased heart, which albeit relatively bloodless, entails technical problems of no small proportion. As experience grows with cardiac by-pass and operation under direct vision, the problems will seem less formidable. With the proper selection of cases and the evolution of standard operative technique, it is not unforeseeable that direct vision operation on the open heart will become commonplace.

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Surgical Treatment for Poliomyelitis Paralysis

Principles of Reconstruction of the Upper Extremities

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• **Successful surgical reconstruction of the upper extremities paralyzed by poliomyelitis depends largely on the careful analysis of the individual problem and replacement of critical motions of the upper extremity. These replacements or substitutions may be gained by muscle transposition, tendon transplantation, tenodesis, bone block, or arthrodesis.**

PARALYTIC POLIOMYELITIS can bring about a great variety of limitations of use of the upper extremities. The motor power still available in patients with upper extremity paralysis will determine the amount of reconstructive operation necessary for functional rehabilitation. Such rehabilitation is dependent upon the physical status of the patient in each case. In some cases only enough functional rehabilitation to permit a patient to carry out self-care can be effected, while in others an operative procedure can change the status of the patient from the standpoint of employability.

Depending upon the requirements of the patient and estimates of what can be done surgically, the aim is to regain certain categories of function for each patient. In the upper extremity, stability, range of motion and strength are needed. Many different operative techniques have to be used, the procedure depending upon the individual need, and the degree of improvement in status will vary. Limb mobility is the major consideration, although stability is important as related to holding objects or to limb placement. Stability is most important proximally, while motion becomes increasingly important distally, in this order: Scapulothoracic, scapulohumeral, elbow, wrist, finger joints. The available work area for any given patient will depend in some degree on the placement and use of his upper extremities to increase his utilization of this work area.

As a general rule the middle ranges of joint motion are of greatest functional value and should be sought for first. For purposes of discussion at this time, emphasis will be put upon certain procedures which have been found to be of proved worth in cases of paralytic poliomyelitis involving the upper extremity. The movements most essential to function are: Grasp (or some portion thereof), wrist flexion and extension, pronation and supination, elbow flexion and extension, humeral internal and external rotation, humeral flexion and extension and humeral abduction. Scapular stability and trunk balance are important in the full utilization of those motions. It must be kept in mind that every motion must have an opposing motion, although in some instances the opposing motion may be attained passively or by gravity.

Finger and thumb flexion and extension may be attained by the use of any active musculotendinous unit of the wrist, either flexor or extensor. This is probably related to the fact that wrist stability in various hand activities is supplied simultaneously both by wrist flexors and extensors. Furthermore, highly specialized muscles such as these which are under excellent cortical control will learn new patterns of motor activity with ease. Thumb and finger flexion frequently can be regained by transferring the extensor carpi radialis longus and brevis to the thumb and index finger and the extensor carpi ulnaris to the outer three fingers. If necessary the brachioradialis can be used to provide flexion to the third, fourth and fifth fingers. Its strength is excellent, but its range of motion is shorter than that of the wrist extensors.

It should be borne in mind that muscle fiber length is directly proportionate to the range of excursion in that muscle in its original anatomical site.[3] This is in direct relation to the range of motion it originally supplied to a joint. For that reason, wrist muscles should be transferred to the fingers so that they may work through a functionally useful range of midposition. Thus, when the brachioradialis is used the fingers should be pre-positioned into a more flexed position than when wrist motors are used. When transferring all wrist extensors, arthrodesis of the wrist is done, for finger extensors alone have not sufficient strength to provide stabilization

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for the wrist except for light activities. Even in such activities they gradually produce hyperextension of the metacarpophalangeal joints. Wrist flexors can be used to provide or reinforce finger flexion, although they are often absent when finger flexors are absent. Wrist flexors can also provide thumb and finger extension. The surgical program is often planned so that the flexor carpi radialis is placed in the thumb, and the flexor carpi ulnaris into the finger extensors. A variation of this may be to utilize the palmaris to provide extension of the index finger, and the flexor carpi ulnaris is then placed to the outer three extensors. The brachioradialis may be used as a finger extensor, although it is not as good as wrist motors in this location. Wrist fusion is unnecessary when moving the flexors except in very rare circumstances.

THUMB AND FINGERS

Patients who require a respirator generally have associated upper extremity weakness. The hands in particular are susceptible to contracture which may develop as the arms lie constantly in a fixed position. A large portion of the patient's time is spent with the fingers in a position of comfort. Proper splinting and exercise are difficult and painful and require the services of carefully trained and indoctrinated personnel. Even when the hands are exercised daily a full range of motion cannot always be secured. Motor power which may be regained is not always effective in mobilizing the metacarpophalangeal joints due to established contracture; and when this condition prevails, capsulectomy of the collateral ligaments of the metacarpophalangeal joints may be indicated.

Frequently poliomyelitis results in "clawing" of the fingers, caused by pronounced weakness or loss of the lumbricales and interossei. In such instances hand function can be improved materially by the use of Bunnell's technique of transplantation of flexor digitorum sublimus tendons into the dorsal interossei expansions.[1] This is an excellent procedure that has given very satisfying results in properly chosen cases. The surgeon must first assure himself that the flexor digitorum profundus has sufficient function to provide for finger closure without the aid of the flexor digitorum sublimus.

Thumb opposition is of great importance in hand function, and restoring it provides an appreciable functional gain. This gain will be acquired differently under varying circumstances. When there has been a loss of opponens only, opposition is best secured through transfer of the tendon of the flexor digitorum sublimus to the fourth finger around the flexor carpi ulnaris tendon, or through a tendon pulley just above the pisiform with attachment of the tendon to the distal dorsal ulnar aspect of the first metacarpal or proximal phalanx or to both. The line of force must be directed toward the pisiform. While many other procedures are useful, this particular one is most gratifying to the patient and to the physician. The fewer the muscles remaining about the thumb, the less effective will be the end result. In some instances other motor power must be supplied to the thumb by means of tendon transplants to effect useful return of opposition. If thumb involvement is severe, and available muscles for transfer are limited, arthrodesis of the first metacarpal to the greater multangular or by bony bridge to the second metacarpal is desirable. Occasionally, fusion of the first metacarpal to the multangular plus tendon transplantation to provide active opponens replacement will give results superior to those obtainable by fusion alone. This provides for opponens pre-position by joint stabilization and requires less motor power for active opposition. Thus, severe loss of other thumb muscles may be compensated for partially while allowing some active opponens motion. In general, procedures to replace opposition are successful functionally even though the function obtained may not equal normal opposition.

WRIST MOTION

Because of its functional significance, wrist motion should be retained if possible. It is surprising how much a patient can accomplish using varying degrees of wrist dorsiflexion alone without active finger flexion. In selected cases tenodesis of the flexor digitorum profundus to the radius may provide excellent grasp, activated solely by strong wrist extensors. Here, wrist extension is of vital importance. However, if motor power in the wrist is absent, or if the muscles are thought to be functionally more useful at a new site, wrist arthrodesis should be done. If the wrist joint cannot be stabilized, motion which should be expressed in the fingers may reach them in a very dilute form, if at all.

Pronation and supination of the wrist are important. Because the wrist flexors rise from the medial humeral condyle, if any strength remains in these muscles, the patient will have weak pronation. Adequate supination may be provided by an active biceps. If this muscle is paralyzed, supination sometimes can be gained for the patient by biceps replacement—for example, transposition of either the pectoralis major or the latissimus dorsi to gain an attachment to the radial tubercle.[2,9] If no supination is present in the face of good pronation, the flexor carpi ulnaris or palmaris longus insertion may be transferred dorsally to the distal radius, thus pro-

viding this motion. An assisting hand does not necessarily require wrist motion or pronation and supination. However, if these movements are present the functional competency of the extremity is greatly enhanced.

ELBOW FUNCTION

Elbow function depends upon three major uses —flexion, extension and stability. At times all three may be restorable. The most important function is flexion which gives ability to lift objects and to move them from place to place without the assistance of either the other arm or a functional aid. The strength of this motion will determine the patient's ability to accomplish many daily habit activities as well as his work. Flexion is best obtained by Steindler's flexorplasty where the wrist flexor origins are shifted proximally on the humerus from the medial humeral condyle.[10] Flexor digitorum sublimus and flexor digitorum profundus origins may be shifted proximally, but use of them without strong wrist flexors is doomed to disappointment. Properly executed, Steindler's flexorplasty provides a very satisfying replacement. Full elbow extension following this procedure is uncommon and is not desirable, since for mechanical reasons the net result is a decrease in overall strength and function. Much greater force is required to initiate flexion from full extension. The elbow flexors seem most competent at about 90 degrees of flexion. Therefore, bone block of the elbow is often done at the time of flexorplasty. This is indicated particularly when only weak flexion is expected to result from the procedure. Bone block of the elbow may be used to produce a flexion contracture of between ninety and one-hundred and thirty degrees. Less strength, therefore, is necessary to produce elbow flexion at such an angle than would be required if extension were complete. The bone block, while limiting the flexion arc, preserves the range of greatest functional usefulness. After bone block the patient also may enjoy some of the advantages of elbow arthrodesis, since the elbow which has been blocked allows for the transportation of objects in the flexed range and without use of muscle power.

Clark's procedure (pectoralis major transplant) or a modification of it done by the authors is useful and can permit the lifting of about eight pounds as measured at the hand. This procedure can be used to aid flexion and will also provide supination by transfer to either biceps or radial tuberosity. The forward transposition of the latissimus dorsi will give results equal to the pectoralis major transposition when done on carefully selected patients. Triceps transfer forward to the biceps tendon or radial tuberosity results in strong flexion, although through a range which approximates about one-third that of the biceps. Elbow extension is useful; one can push with the extended elbow, but this action is so seldom needed for light activities that it is hardly valuable enough to consider replacement in order to obtain it. Gravity will provide this motion for most activities, and this, working against varying positions of elbow flexion with an efficient elbow flexor, will provide power for most necessary function in varying ranges of elbow flexion and extension. In selected cases stability can be gained usefully by arthrodesis or by bone block. When there is no available muscle for replacement, arthrodesis will provide stability in flexion. The arm may then be used for carrying objects.

HUMERAL ROTATION

The importance of humeral rotation is not generally appreciated. A large number of activities of the upper extremities depend upon this movement. Writing and eating are two simple examples. The subscapularis, pectoralis major, teres major and the latissimus dorsi all act to provide internal rotation. The supraspinatus, infraspinatus and the teres minor are the chief external rotators, but the long head of the triceps assists in this motion. If only internal rotation remains in the paralyzed extremity, external rotation can be secured by transfer of the latissimus dorsi and teres major laterally, after the method of L'Episcopo. Humeral abduction is not as important as humeral forward flexion. Humeral forward flexion can be provided by several active muscles, or combinations of muscles. The coracobrachialis, pectoralis major, biceps and the anterior portion of the deltoid all participate in humeral forward flexion. Humeral extension is gained through the posterior third of the deltoid, scapular head of the triceps, teres major and the latissimus dorsi.

Operations to gain humeral abduction usually depend upon the transplants acting as partial but not total replacement. No muscle transplantation procedure now known will of itself functionally rehabilitate the flail scapulohumeral joint. Given a rotator cuff, however, the deltoid action can be replaced at least partially by the use of Ober's procedure[8] in which the scapular head of the triceps and the short head of the biceps are advanced toward the tip of the acromion, or by Hildebrandt's pectoralis major turnback.[4] Even without help from other muscles, Ober's procedure will improve abduction of the flail scapulohumeral joint. In general, Hildebrandt's procedure should be done only when there is at least partial activity of the musculotendinous cuff. Under that condition, especially with some remaining power in the posterior deltoid, Hildebrandt's procedure will be found very helpful. This

potential activity can be appreciated when one observes forced forward flexion in the normal shoulder. On this test the clavicular portion of the pectoralis major is clearly visible. Sometimes a combination of procedures designed to promote strength in the proper plane will be useful. For the most part however, transplants about the shoulder have been disappointing unless used in critically selected cases. Proper synchronization of the scapulohumeral and scapulothoracic force couples is necessary to accomplish abduction, and to provide satisfactory results.

SHOULDER FUNCTION

In a subluxating shoulder, occasionally shoulder tenodesis is of value. This can be accomplished by passing the tendon of the long head of the biceps through the humerus and back to the acromion. Although the tendon may sag after some time has elapsed, this procedure is very useful as a temporary measure.

When scapulothoracic musculature is satisfactory, shoulder arthrodesis may be of great help. However, in a severely paralyzed patient it is not generally a satisfactory functional procedure. If the patient's activities are in the self-care and daily habits range from a wheelchair, shoulder arthrodesis is usually contraindicated. If function of the elbow and hand is good, and the scapulothoracic musculature is satisfactory with a flail scapulohumeral musculature, unilateral shoulder arthrodesis may be performed. This procedure often proves quite satisfactory in the restoration of partial function and can add greatly to the range of arm activity. It gives strength and stability to other upper extremity motions. Shoulder arthrodesis may be helpful in securing proper hand placement and to allow the most effective use of the hands. It can provide the stable link in an otherwise ineffectual upper extremity, allowing heavy objects to be pushed or pulled. With a stable shoulder it may be possible for the patient to pull himself up from a sitting position. If such arthrodesis appears to be the necessary link to stability in an otherwise competent upper extremity, it should seriously be considered. Nevertheless, since there is some sacrifice in shoulder rotation as well as in abduction, arthrodesis should be evaluated in the light of the functional requirements of the individual patient. When loss of mobility will not seriously hamper some essential activity for the patient, fusion of the shoulder is not contraindicated.

When the scapulothoracic force couple is absent, abduction and general shoulder function is sharply impaired even though the distal musculature is good. To provide scapular fixation or motion, the muscular force couple depends upon three major lines of force. These are represented by the forward pull of the serratus anterior upon the inferior angle of the scapula, the upward rotation of the upper trapezius on the outer end of the scapula, and the lower trapezius which provides some rotation of the scapula downward and establishes stability with the assistance of the rhomboids. To accomplish this replacement, various techniques have been used. In brief, however, the serratus component may be best replaced by transfer of the pectoralis major insertion to the lower third of the vertebral border of the scapula. Other transplants that have been reported to have given satisfactory replacement of the serratus magnus component are those of the latissimus dorsi, teres major and pectoralis minor. In some instances useful scapular pre-position has been gained by the use of a fascial transplant from the scapula to the rib cage, choosing a rib two spaces cephalad, to the point of the scapular fixation.

While the experience of the authors in replacement of the lower trapezius force couple has been somewhat limited, it has been found that motion produced by this force couple can be improved by shifting the rhomboids and lower trapezius laterally (the scapula medially) by suspension with fascial strips to the erector spinae; or, by interscapular fascial fixation after the manner of Lowman. The scapula should not be fixed at its distal vertebral margin, for that would prevent rotation. When active motor replacement is not possible, it is best that static positioning be provided. Interscapular fixation provides stability in much the same manner as do the rhomboids, and may also provide some active replacement of this portion of the force couple.

The upper force couple component can be improved by lateral shift of the insertion of the levator angulae scapulae as well as by transfer of the clavicular and sternal origins of the sternocleidomastoid to the acromion. Scapular fixation to the chest wall has also been reported. This should be done only in very carefully selected cases where no decrease in upper extremity function will follow, and where the scapulohumeral component is adequate to justify sacrifice of scapulothoracic motion.

TRUNK STABILITY

Trunk stability must be provided before efficient use of an upper extremity can be made. In severely paralyzed patients trunk stability may often be achieved satisfactorily by using the back and arms of the wheelchair for support or by good corseting. Lowman's[6,7] procedure of fascial abdominal transplantation always should be considered carefully, for both crisscross and lateral transplants may afford stability of the trunk which can be of inestimable value to the patient, since it provides a base from which he may use his upper extremities. Without

such trunk support the patient is unable to lift his arm without throwing himself out of balance. Such fascial transplantation completes the line of stability necessary for suitable arm placement; without trunk stability, the arm cannot be used effectively.

One principle which should be remembered in replacement and substitution operations is that any muscle of sufficient strength can be put to a new task in another site provided it can be brought into place without sacrificing its nerve and blood supply, or if mechanically its line of pull can be instituted in a straight line. Very few transplants are successful when pulleys and angulation are necessary to form the pattern of transposition. Muscle transpositions carry no secondary risks if they are carefully executed and if the muscles chosen for transplantation are not doing an essential motor job where they are normally located.

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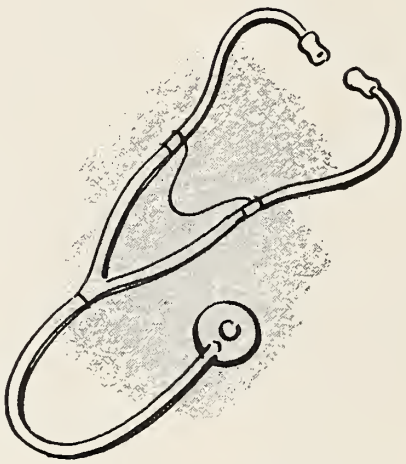

Surgical Treatment for Poliomyelitis Paralysis

Principles of Reconstruction of the Lower Extremities

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• In surgical procedures for the improvement of function in lower extremities paralyzed by poliomyelitis, even the best that can be done will fall far short of normal function. But choosing and carrying out the operation best suited to the paralytic situation of the patient and to the kinds of function that will benefit him most, often can make the patients more self-sufficient, can make improvements that enable him to walk farther with less fatigue, to balance without support, to walk without grotesque limping, or that sometimes permit discarding a brace. Sometimes improving his ability to carry out even seemingly minor tasks of personal care is a definite positive service which to the patient is a boon.

RECONSTRUCTION in the lower extremities is somewhat different than in the upper extremities, at least to the extent that in the lower extremities it is more important to have strong muscles proximalward while in the upper extremities the joints distalward —wrist, hand and fingers—are the most important.

In other words if one could choose the distribution of paralysis following poliomyelitis, it would be preferable in the lower extremities to have good hip and knee muscles while in the upper extremities, of course, the hands and fingers are the most important. The upper extremity is practically useless without a functioning hand, while in the lower extremity the patient can be made to walk well, without braces, even though he has a completely paralyzed foot, provided there is fair remaining power of the hip and knee.

Surgical reconstruction of the lower extremities following poliomyelitis is a problem that presents many facets and numerous combinations of disability. For this reason it is impossible to lay down hard and fast rules of surgical procedure. Each patient must be studied and operation outlined after all the facts and findings are carefully evaluated.

It is not enough that the surgeon be competent to perform the various surgical procedures that will be necessary in the reconstruction program. Given a patient with one or both lower limbs paralyzed or partially paralyzed with poliomyelitis, an experienced surgeon should be able to outline a comprehensive program that may extend over several years. The timing as to the age at which operation is done and the sequence of the various surgical steps can be of great importance.

There are many factors to be weighed. The age of the patient at the time he had poliomyelitis has a great deal of bearing on the surgical treatment that will be indicated in the rehabilitation program.

I. THE INFLUENCE OF AGE IN PLANNING THE SURGICAL PROGRAM

The indications for operation, particularly on the lower extremities and the spine, are considerably less in the case of a patient who contracted poliomyelitis after the age of 14 or 15 years than in a patient who had the disease in infancy or young childhood. After growth is complete, deformities are not a problem. In a young child certain deformities will develop in spite of the best of care. In adults there is little tendency to develop hip and knee contractures, calcaneus, valgus, varus or equinus deformities of the feet regardless of the degree and distribution of the paralysis. Therefore, in adults, tarsal stabilization is seldom necessary. On the other hand, operations to effect arthrodesis are an accepted and common procedure when poliomyelitis occurs early in life. Likewise, in adults it is not necessary to transplant muscles to the inner or outer borders of the feet because varus and valgus deformities do not occur to any degree. Sometimes it is necessary to transplant muscles to overcome an uncontrollable foot drop with a steppage gait, and in some instances it may be necessary to transplant available muscles to the os calcis to strengthen a weak calf muscle. In general, however, indications for operations on adults are much less than for operations on a young child.

II. OPERATIONS ON THE FOOT AND ANKLE IN SMALL CHILDREN

When poliomyelitis is contracted in infancy, the problem is quite different. Increasing deformity occurs regularly and the indications for operation are much greater.

It used to be held that transplants about the foot

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and ankle should not be done until after the foot had been stabilized. This is still a good rule, but there are exceptions. Many surgeons hesitate to transplant muscles in the foot of a very young child in whom the foot has not been stabilized. The reasons are as follows:

(a) Transplants in a weak, wobbly foot are not as effective as they are in a more mature foot that has become stabilized.

(b) It is possible, by early transplants before tarsal arthrodesis, to reverse the deformity, particularly when the operation is done to correct a varus or valgus deformity.

A. Calcaneus Deformities

There is no treatment or brace that will effectively prevent a calcaneus deformity if the calf is paralyzed, and the deformity is made still worse if there is a strong anterior tibial muscle.

A strong calf muscle is so important for good locomotion that, in the author's opinion, all available muscles should be used to reinforce the calf. Moreover, the reinforcement should be done early rather than to wait until the foot is sufficiently mature for triple arthrodesis. This early transplant not only improves the gait but it also lessens the dreaded calcaneus deformity.

The most important muscle to transplant is the anterior tibial, for it is a powerful one and when transplanted it adds materially to the strength of the calf muscles. If it is not transplanted early the calcaneus deformity will increase. The foot finally reaches a point where adequate plantar flexion cannot be obtained even after the anterior tibial muscle is removed and transplanted.

If adequate other muscles are available, it probably is better not to use the peroneus longus, for this muscle is an effective plantar flexor of the foot and aids in the final push-off of the foot in walking.

B. Equinus Deformities

Equinus deformity is frequently a combination of a horizontal os calcis due to a short calf muscle and a drop of the forefoot due to contracted plantar structures.

In a young patient a short calf muscle can be elongated by persevering stretching in a plaster cast. Since the gastrocnemius and soleus muscles are important ones for locomotion, one hesitates to weaken them by surgical lengthening if it can be avoided.

The drop of the forefoot, on the other hand, is a difficult deformity to prevent and once established cannot be dealt with except by operation. If operation is done early and the foot is not rigid, operation on soft tissue is usually adequate. Correction should be maintained for some months in walking short-leg plaster casts to prevent recurrence.

C. Valgus Deformities

Severe valgus deformities should be corrected early by transplants or other operation rather than waiting until the foot is sufficiently mature for triple arthrodesis.

The Grice procedure has been a real advance in dealing with valgus deformities of the foot in very young patients. It restores the upright diameter of the foot and overcomes the valgus deformity much better than transplants alone. This operation also prevents a reversal of deformity (which may occur if only tendon transfers are done) if carried out at an early age. The Grice operation can be done at a much earlier age than the conventional triple arthrodesis.

D. Varus Deformities

Occasionally a severe varus deformity cannot be controlled by bracing. In such circumstances, it would seem logical to transfer the insertion of the anterior tibial tendon to the outer border of the foot, preceded of course by plaster cast correction even before the foot is mature enough to do an operation to bring about arthrodesis.

E. Panarthrodesis

In properly selected cases in which there is pronounced weakness of the calf muscle and weakness of the knee to the extent that the patient may be unable to walk without a brace, the panarthrodesis operation is a very successful procedure. There is a tendency in such cases to set the feet with the heel too high. This makes walking difficult and in a growing child it tends to create a back-knee deformity. Some surgeons prefer to wait until the foot is through or almost through growing before performing this operation. It is the author's belief that this operation is better done around the age of nine or ten years. The adult takes a much longer time to accommodate himself to arthrodesis of the ankle than does a younger patient. A young patient develops better compensatory motion distal to the fusion area than does an adult. Many surgeons routinely do a panarthrodesis in two stages for fear of causing an avascular necrosis of the astragalus. The author has yet to observe such a complication, and can see no reason why the entire operation cannot be done in one stage. In a paralytic foot panarthrodesis can be easily and quickly done.

III. KNEE DISABILITIES

The surgical possibilities for improving a weak knee are much less than for a weak foot and ankle.

A. Weak Quadriceps Mechanism

Operation to improve weak extension power of the knee is not looked upon too favorably in some

quarters, but the author believes that in properly selected cases it has real value. It is true that if the patient has a good calf muscle and more particularly if he also has fair extension power of the hip, he can walk without a brace and is able to lock his knee effectively. However, these patients must be on constant guard to make sure that the knee is locked in extension with each step. They have a certain amount of insecurity if the knee is caught off guard in making an unexpected step and they have a certain amount of fatigue on walking. With a successful transplant to improve the quadriceps power, the patients comment on the fact that they can walk longer distances without fatigue, and in general they are very pleased with the operation. If the operation is done in circumstances not suitable for it, the end results are disappointing. The hamstring muscles together with the gastrocnemius muscle are important stabilizers of the knee. For this reason one should make certain that after the transplant there is a fair amount of flexion power left. Also the operation will be disappointing if it is done in a patient with a very weak calf and very weak extension power of the hip.

When adequate muscles are available, the biceps and at least one of the inner hamstring muscles should be transplanted in order to balance the pull on the patella and thus avoid outward subluxation of the patella which might occur if only the biceps muscle were used. Sometimes, of course, this is not possible and the biceps muscle has to be used alone, but when this is done care should be taken to dissect the biceps muscle proximalward as far as possible in order to get a fairly straight line of pull on the patella. There is probably less chance of later lateral subluxation of the patella if the biceps is inserted into the distal split end of the rectus femorus as well as into the patella itself.

B. Flexion Deformities

Flexion deformities are a frequent occurrence in young patients with poliomyelitis. If the flexion deformity is recognized early, it usually can be controlled by wedging casts, but if the deformity is fixed and long-standing, then persistent wedging is not likely to be successful and it may even cause a backward subluxation of the tibia. In such cases it is much better, in the author's opinion, to do a truncated V osteotomy in the supracondylar region of the femur. With osteotomy of this type there is no difficulty in controlling the short distal fragment and healing occurs rapidly.

C. Knock-Knee Deformities

A knock-knee deformity is common when poliomyelitis occurs early in life. It is usually associated with flexion and abduction contracture of the hip, a contracted fascia lata and intermuscular septum, flexion deformity of the knee, and tibial torsion deformity of the leg. The author believes that in knock-knee deformity of any consequence the best solution is a truncated V osteotomy on the medial side of the femur in the supracondylar region, together with transverse severance of the fascia lata above the knee and resection of the intramuscular septum.

D. Back-Knee Deformities

Back-knee deformities are very distressing and are a frequent complication of poliomyelitis. So far as is known, there is no adequate way to cope with this problem by soft-tissue operation. The best practical result is obtained by a high osteotomy of the tibia and fibula to create an anterior bowing at the osteotomy site sufficient to offset the genu recurvatum. In doing this operation the cut on the tibia should be made as high as possible, while that on the fibula should be made at a lower level in order to avoid a stretch paralysis of the common peroneal nerve.

E. Tibial Torsion Deformities

Tibial torsion deformities in varying degree are very common in patients who have had poliomyelitis affecting the legs. Even though the patient has to use a long-leg brace permanently, it would seem that correction of such a deformity is justifiable, for otherwise brace fitting is difficult and the deformity tends to create a varus attitude of the foot with formation of painful calluses along the outer border.

There is one set of circumstances in which correction of tibial torsion deformity must be given particularly careful thought. If the knee is extremely weak, the tibial torsion deformity aids the patient in locking the knee when walking without a brace. If the deformity is corrected in a borderline case in which the patient is just barely able to walk without a brace, the correction may be disappointing in that the patient may thereafter have to use a brace to walk.

Whenever the decision is a matter of choice, leg deformities, especially tibial torsion and knock-knee, should be corrected before tarsal arthrodesis or panarthrodesis is carried out. To reverse that order might change a satisfactory position of the foot into a deformity that would necessitate a second operation on the foot.

F. Epiphyseal Arrest

Disparity in the length of the legs is always a problem when dealing with poliomyelitis of the lower extremities. For this problem one has the choice of epiphyseal arrest, stapling, or shortening the leg on the good side after growth is complete.

Generally speaking, most orthopedic surgeons probably would prefer epiphyseal operation to femur shortening. In recent years the stapling operation has been widely used, but the experience at the Orthopaedic Hospital, Los Angeles, has been that epiphyseal arrest is much more dependable. In the author's practice the correction of knock-knee deformities has worked out very well with stapling, and often this can be done instead of osteotomy, provided the leg has sufficient future growth.

G. Arthrodesis of the Knee

In flail legs, arthrodesis of the knee will sometimes make it possible for a patient to discard a long-leg brace. This operation, however, has not been widely used, probably largely because the patient himself is usually opposed to stiffening of the knee joint.

IV. HIP DISABILITIES

Operation to improve the strength of a badly weakened hip leaves much to be desired.

Flexion and abduction deformities of the hip are common and these can be corrected to the patient's advantage.

As far as transplants or transfers of hip muscle to improve strength are concerned, there is usually little choice.

The iliopsoas is a powerful muscle and is frequently spared. The author has had no personal experience in the use of this muscle to improve abduction or extension, but surgeons who have used it to improve the abduction power have reported encouraging results.

A. Paralysis of the Abdominal Muscles

Sometimes weakness of the hip is complicated by paralysis of the abdominal wall. In order for the hip muscles to function to their maximum potential, the fixator muscles—which are primarily the abdominal muscles—must be strong. If the abdominal wall is weak, the hip muscles are working below maximum efficiency. Therefore a surgeon dealing with a weak hip should direct his attention to the abdominal muscles. Fascial abdominal transplants properly placed will give some indirect additional hip strength and stability.

B. Fascial Hip Transplants

In addition to the above indirect approach to the problem, fascial transplants from the trochanter to the abdomen and back offer a direct approach to the hip problem.

If the abdominal wall is strong and hip abduction is decidedly weak, the following procedure should be considered: The fascia lata is stripped upward from above the knee and the proximal end, without cutting it, is anchored to the greater trochanter. The distal free end is passed subcutaneously and woven into a large mass of the external oblique muscle, the distal end of which has been freed and stripped proximalward from the ilium.

If hip extension is severely impaired, the fascial strip can be passed posteriorly and woven into a mass of the detached erector spinae muscles of the lumbar region, or, preferably, into a detached mass of the latissimus dorsi muscle.

Should both hip abduction and extension be involved, half of the fascia can be sutured to the latissimus dorsi muscle and the other half to the external oblique muscle of the abdomen.

It sometimes happens, of course, that the back and abdominal muscles are weak and cannot be used for a transplant. In such instances some help for stability can be obtained by suturing the turn-back flap of the fascia lata to the rim of the ilium or to the rib cage.

None of these operations works miracles. They do not greatly decrease the degree of limping nor improve active abduction or extension of the hip materially, but they do give added stability, a feeling of additional security and a sense of more endurance for walking and standing.

C. Hip Fusion

As in the case of the knee, hip fusion for a badly paralyzed leg has not been greatly used by most orthopedic surgeons. This probably can be ascribed in part to hesitancy of the patient and in part to reluctance on the part of the surgeon. That the end results in some cases have turned out well cannot be denied.

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Chronic Fecal Impaction in Children

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• In seventeen cases of chronic fecal impaction in children the main symptoms were severe constipation, pain and bleeding on defecation, soiling of the underpants, and anxiety. The main findings were large impactions in the rectum, minor injuries of the anal canal, some degree of patulous anus and soiling of the perianal skin.

Good results were obtained in all cases with treatment that included giving dioctyl sodium sulfosuccinate and flavored petrolatum, attention to diet, encouragement of the patient and advice to the parents.

It is the purpose of this communication to present the symptoms and the findings associated with chronic fecal impaction in children, and to outline a method of treatment. This distressing condition is not rare, and it may easily go unrecognized. It causes disturbing psychologic problems for both the child and the parents—problems that can quickly abate when the cause is known and the treatment started.

The series here reported upon included 17 patients, nine females and eight males varying in age from three months to ten years. The average age was 7.25 years. Nine of the patients were between seven and ten years of age. The duration of the symptoms varied from two months to five years, with an average of 19 months. Clinical data is summarized in Table 1.

The chief complaint in all cases was severe constipation. Large stools were passed at intervals of from three to twelve days. The stools, often large enough to obstruct the plumbing, usually caused pain and slight bleeding because of minor injuries to the anal canal. Soiling of the underclothes was a common secondary complaint. Soiling often caused a characteristic walk with the knees brought together and the back slightly bent in an apparent attempt to separate the skin from the soiled undergarments.

Anxiety on the part of the child and parents was expressed in all cases. The children were afraid to attempt a bowel movement; those of school age were reluctant to try passing an impaction in the morning since the slow painful process might make them late for school. At school they were unwilling to have a movement for fear of obstructing the plumbing or taking too much time. For the same reasons they were unwilling to defecate anywhere but at home, and they refused invitations to their friends' and relatives' homes.

Nine of the children expressed the fear that there was something very unusual about their inner anatomic structure, and exhibited both embarrassment and feelings of inferiority. The seven who soiled their underpants had the most serious psychological symptoms. They seemed withdrawn, embarrassed by their walk, fearful of offending by their odors. They often refused to play with other children.

From the Department of Proctology, Mount Zion Hospital, San Francisco.

Submitted July 26, 1956.

The parents in all cases were concerned about the problems of the child and about the obvious helplessness of the child to cope with them. They feared some unusual anomaly, malformation or disease, and they disliked the soiling because of the odors, the isolation of the child and the extra laundering required.

The initial impaction was apparently the result of a number of factors: Ignoring the urge to defecate, taking drugs such as codeine during infection of the upper respiratory tract, and minor injuries to the anal canal caused by a hard stool and resulting in painful defecation. Once the impaction formed, an attempt to pass it caused much discomfort and anxiety and initiated an obvious vicious cycle. The soiling was apparently the result of the inability of the sphincter to retain small amounts of liquid fecal material that seeped down over the impaction. This, plus the impaction itself, seemed to exhaust the sphincter and to cause a loss of tone.

The children were healthy and, although usually shy, anxious for help. In most cases the impaction could be palpated abdominally and there was a mild degree of abdominal distention. No abnormalities were noted upon external inspection of the anus except that in cases in which soiling was a factor the perianal skin was contaminated with feces. Before digital examination was attempted, an applicator dipped in a topical anesthetic ointment was inserted into the anal canal and left there for five minutes. Large impacted stools felt on digital examination were not necessarily hard. In some cases they were soft and gummy although more often firm and formed. In the cases in which soiling occurred there was a varying degree of patulous anus. Patients with minor injuries of the anal canal had some degree of sphincter spasm. An anoscope of the

TABLE 1.—*Clinical Data on 17 Cases of Fecal Impaction in Children*

Case	Age and Sex		Duration	Degree of Pain*	Degree of Soiling*	Degree of Bleeding*	Anal Injuries*	Degree of Patulous Sphincter*
1	7 years	M	3 months	0	3	0	0	1
2	8 years	M	5 years	0	4	0	0	3
3	9 years	F	3 years	3	0	½	2	0
4	8 months	F	6 months	4	0	2	3	0
5	5 years	F	18 months	1	1	1	1	1
6	6 years	M	1 year	1	0	1	1	0
7	10 years	F	30 months	2	0	1	1	0
8	4 years	F	1 year	2	0	1	1	0
9	7 years	M	2 years	3	0	2	2	0
10	23 months	F	5 months	1	0	2	2	0
11	8 years	M	2 years	0	4	0	0	3
12	5 years	M	10 months	1	0	1	1	0
13	6½ years	F	1 year	0	3	0	0	3
14	4 years	F	11 months	0	4	0	0	4
15	8 years	M	2 years	3	0	2	2	0
16	5 years	F	14 months	1	0	1	1	0
17	7½ years	M	27 months	0	4	0	0	3

*Symptoms are graded from 0 to 4 to indicate degree of severity.

size used for adults was passed in all cases. In five patients small cracks were observed in the anoderm at the level of the mucocutaneous line and just below it. In no case was there a true fissure-in-ano or cryptitis. The lesions were superficial and obviously of traumatic origin.

Proctoscopic examination was not attempted until after treatment was started and the rectum was reasonably empty. There were no cases of clinically recognizable megacolon and there were no polyps, ulceration or other disease. It was interesting that patients who had frequent soiling had patulous anus but no pain, bleeding or ulceration and that patients who were not soiling had an increase in sphincter tone and frequent pain, bleeding and ulceration.

PREVIOUS TREATMENT

Ten of the patients had been observed previously by physicians and had been given a number of laxatives with no significant relief. Enemas of soapsuds or of saline, peroxide or sodium phosphate solutions gave occasional temporary relief but were more often ineffective. In four instances, impacted feces had been removed with the patient under general anesthesia. Four patients were being given psychiatric treatment because of the soiling.

TREATMENT

Management of this condition involved topical, dietary, systemic and psychological aspects. The traumatized areas in the anal canal were cauterized with 3 per cent silver nitrate solution. Where these lesions were numerous or deep, insertion of a 5 per cent ichthyol ointment twice daily for a week was recommended. A regular diet with some emphasis on leafy vegetables and fruit was outlined. Adequate intake of fluids, including a good sized glass of cold fruit juice for breakfast and four to six glasses of liquid during the day, was emphasized. Skimmed milk was substituted for whole milk. Rich candies and dessert were omitted. Fifteen to 30 drops of dioctyl sodium sulfosuccinate (a wetting agent which so affects the surface of the stool as to permit the penetration of water or oil) was prescribed to be taken morning or evening in milk or fruit juice. A flavored petrolatum given along with the dioctyl sodium sulfosuccinate in an average dose of one tablespoonful morning and night, in the early weeks of treatment seemed to bring about better results than dioctyl sodium sulfosuccinate alone. The dosages were adjusted downward as time passed.

Encouragement was given both to the parents and the child. Wherever possible the child was seen alone in the consultation room and was encouraged to make reports to the physician over the telephone. The family was told that results would come during the next 30 days and not to be discouraged if nothing remarkable occurred during the first week or two. Development of habits of defecation was stressed. The time suggested as preferable was before school in the morning, but if necessary any time at which the child could go to the toilet regularly each day at the same time was acceptable. Sphincter exercises were suggested for patients who had soiling, but only after some regularity of defecation had been brought about.

RESULTS

In all cases the chronic fecal impaction ceased and the children developed regular bowel habits. Absence of pain was noted in all cases after one week. For the first two weeks, there would be one or two large stools per week, and the frequency

increased after that; by the end of four weeks the average frequency was five times weekly, and by six weeks all children were having a bowel movement daily. Discontinuation of the medicine was begun after 30 days of daily regular bowel movement. At first both the oil and dioctyl sodium sulfosuccinate were reduced in dosage and then the oil was eliminated. The drops were continued until 60 days of regular bowel movements had elapsed. An occasional setback during this period (following an emotional upset or minor illness) was dealt with by temporarily raising the dosages. In five cases there was a minor recurrence of constipation after cessation of all treatment. In those cases a return to medication for a few days sufficed. These patients or their parents reported by telephone twice weekly. Considerable adjustment in dosage was indicated. A remarkable change in the psychological attitudes of these children and their parents occurred. The children returned to normal relationships with their chums. Bowel movements were no longer a topic of conversation in the home. This was especially gratifying in the cases in which soiling had occurred.[2]

COMMENT

Dioctyl sodium sulfosuccinate is also known as Aerosol—O. T. Benaglia, Robinson, Utley and Cleverdon[1] studied the toxicity of the drug in rats. Fifty rats given oral doses of 0.87 grams per kilogram of body weight developed no significant growths or microscopic pathologic changes in a period of six months. The erythrocyte and leukocyte content and the leukocyte differential were unaffected. Wilson and Dickinson[3] reported the use of this agent for 12 years in many hundreds of cases without development of evidence of toxicity of any sort. The preparation is distributed commercially in capsule and liquid form or may be prescribed in the 1 per cent aqueous solution, each milliliter containing 10 milligrams.

An attempt is being made to obtain barium enema roentgen examination in all the cases here reported upon. Although none of the patients have had any symptoms of congenital megacolon, they will all be carefully observed and in the younger patients, especially if there is repeated recurrence of symptoms, biopsy for ganglia will be done. Clinically, however, no cases in this group seemed to raise a question of Hirschsprung's disease.

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Intestinal Obstruction Due to Gallstones

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THE DIAGNOSIS of an intestinal obstruction caused by a gallstone, a condition that usually can be dealt with successfully by early operation, is often missed simply because the possibility is not considered in the differential diagnosis.

This condition should be suspected in any patient with the clinical symptoms of a small bowel obstruction who has no scars from previous operation and does not have a hernia. A history of gallbladder disease is helpful. The most important radiologic sign is air in the common bile duct, which is seen as a "Y" and indicates a cholecystenteric fistula. The fistula is the result of the erosion of the gallstone from the side of the gallbladder into the bowel, usually the duodenum. The stone may lodge in the duodenum, as in one of the cases reported herein, but more frequently it will pass down the small intestine to lodge in the jejunum, ileum or, very rarely, even in the sigmoid colon.

According to Denneen and Broderick,[1] the first recorded case of gallstone obstruction (in 1654) was reported by Bartholin, and Wayne collected reports of 334 cases from the literature in 1914. Women are affected about fifteen times as frequently as men, although they have gallstones only about three times as often as men. The usual age range for an obstruction of this type is 55 to 75 years.

Because of delay in diagnosis and the frequent medical complications in patients with this condition, mortality rates have been high. In older series, the mortality rates were from 40 to 70 per cent. In most later series mortality has been much lower, and in a few small series (including the present series of six cases) none of the patients died.

It is important not to operate on a patient with a gallstone obstruction of the intestine until the fluid and electrolyte balance is restored. On the other hand, an undue delay of several days, during which time the patient may deceptively appear to be improving, is hazardous.

The preoperative preparation of the patient includes passing a long decompression tube into the small bowel. The authors prefer a single lumen mercury bag tube such as those of the Cantor, Harris or Kaslow types rather than the conventional double lumen Miller-Abbott tube, because of the larger lumen available for decompression. After the tube has been passed, the patient is hydrated with intravenous fluids. A blood transfusion preoperatively is sometimes helpful. Because of the high incidence of wound infection (in three of six cases in the present series) and the possible contamination of the peritoneal cavity during enterotomy, administration of antibiotics should be started preoperatively and continued postoperatively. Preexisting complicating factors are numerous in patients with bowel obstruction by gallstones; diabetes and heart disease are common.

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• The possibility of intestinal obstruction caused by a gallstone should be considered in any older person who has vomiting, abdominal distention, abdominal pain and absence of abdominal scars from previous operation.

At operation the small intestine is typically dilated and when it is traced to the obstructing point the impacted gallstone can be palpated. The stone should be removed through an incision at a site slightly proximal to the resting place of the impacted stone. This incision may be made in either a longitudinal or a transverse direction, but it should be closed in a transverse direction. Search should be made for other stones, particularly if the primary one is faceted.

Attempt should not be made at this operation to dissect out the cholecystenteric fistula or gallbladder. It is rarely necessary even at a later date. In the cases here reported, no difficulty was encountered owing to leaving the fistula intact, since it simply forms another channel for bile to enter the intestinal tract. The abdominal wound is closed in layers with chromic catgut supplemented with retention sutures of wire or silk. Nonabsorbable buried sutures are not used in the deep layers because of the high incidence of wound infection after the operation.

REPORTS OF SIX CASES

CASE 1. A 48-year-old woman entered Alameda County Hospital, Oakland, on December 29, 1948. At the time of admission she had had nausea, abdominal pain and vomiting for two weeks, and gastric suction had been carried out for 12 days. She gave a history of having had attacks of severe abdominal pain three years earlier and again six months previously. The possibility of a gallstone

obstruction of the duodenum was considered preoperatively (Figure 1). She was operated upon* January 11, 1949. The duodenum was opened, and two large gallstones were found to be completely obstructing it. Three smaller stones were also present (Figure 2). The stones were removed. Inside the duodenum, the inner wall of the gallbladder was seen fused to and actually forming a part of the wall of the duodenum. The duodenum was closed and the gallbladder not disturbed. There was slight but prolonged drainage from the wound postoperatively. When last observed seven years later the patient was in good health but had occasional epigastric pain and pain in the right upper quadrant of the abdomen.

CASE 2. A 66-year-old diabetic man entered the Peninsula Community Hospital, Carmel, on January 21, 1954. He had noted the onset of nausea and vomiting one week previously while on a trip to Southern California. He attributed the illness to the Southern California smog. He had had diabetes for eight years, and auricular fibrillation, for which he had been taking digitalis, for several years. A clinical diagnosis of probable small bowel obstruction was made. Decompression was carried out with a long, mercury-tipped Kaslow tube, and fluids containing electrolytes were given intravenously. Twenty-four hours after the patient was admitted, laparotomy was done† and a large gallstone obstructing the distal jejunum was palpated. The stone was removed through a transverse incision in the jejunum. The patient made an uneventful recovery and when examined two years later had no further abdominal trouble.

CASE 3. An 83-year-old man entered the Peninsula Community Hospital, Carmel, on June 9, 1954, with complaint of intermittent abdominal pain of a week's duration. Two others members of his family had become ill when he did—with nausea, vomiting and diarrhea—after eating strawberries. The others recovered in 36 hours, but the patient continued to have intermittent abdominal cramps, nausea and vomiting. An abdominal roentgenogram was interpreted as showing "early or incomplete small bowel obstruction." At laparotomy‡ a gallstone 5 x 8 cm. was palpated in the distal third of the ileum, with dilated bowel proximal to it. The gallstone was removed through a transverse incision in the ileum. Recovery was uneventful and the patient then remained well.

CASE 4. A 66-year-old woman was admitted to the Peninsula Community Hospital, Carmel, on June 26, 1954. Three days previously she had been seized with sudden pain in the upper abdomen which continued intermittently, with vomiting, until admission to the hospital. X-ray examination of the abdomen upon admission showed a dilated small intestine and air in the common bile duct (Figure 3). A long, mercury-tipped Kaslow tube was passed for decompression. Fluids were administered for hydration and the patient was operated upon the day of admission. A large gallstone obstructing the distal ileum (Figure 3) was removed from the intestine through a transverse incision.§ The postoperative course was complicated by wound infection which

Figure 1 (Case 1).—Note the dilated stomach and the intraluminal obstruction in the duodenum. Air can be seen in the common duct.

Figure 2.—Gallstones removed from the duodenum in Case 1.

*Operation by Dr. Sumner Everingham.
†Operation by C. S.
‡Operation by J. G.
§Operation by C. S.

Figure 3 (Case 4).—Note air in the common bile duct and dilated small bowel.

cleared after proper drainage. When last examined a year and a half later the patient was well and asymptomatic.

Case 5. A 55-year-old diabetic man was admitted to Monterey County Hospital, Salinas, on August 3, 1954, with complaint of cramping abdominal pain and vomiting, which had begun 24 hours previously. X-ray examination of the abdomen showed small bowel obstruction. Laparotomy** was done the following day and a large gallstone obstructing the ileum was removed. The postoperative course was complicated by wound infection. When observed seven months after operation the patient was asymptomatic.

**Operation by Dr. Aubrey Nunes.

Case 6. An obese 62-year-old Mexican woman was transferred to Monterey Hospital, Ltd., at Monterey, on October 2, 1955. She had become ill with intermittent abdominal pain and vomiting ten days previously, had been hospitalized four days before being transferred to Monterey Hospital, and gastric suction and administration of intravenous fluids had been carried out. The diagnosis of a gallstone ileus seemed likely because of roentgen evidence of a small bowel obstruction, the absence of operative scars or hernia, a history of suspected "gallbladder trouble" for 15 years. At laparotomy§ on the day of admission to the Monterey Hospital, a large gallstone obstructing the distal ileum was removed. The patient was discharged from the hospital six days postoperatively and thereafter remained well.

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§Operation by C. S.

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CASE REPORTS

Pulmonary Histoplasmosis

A Report of Two Cases

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In the last few years histoplasmosis has changed from a little known and poorly understood disease to one which is now widely recognized and less mysterious. For many years after its discovery by Darling in Panama in 1905.[3] it was only rarely identified and it remained a medical curiosity. In 1912 da Rocha-Lima found evidence that *Histoplasma capsulatum* was a fungus rather than a protozoa as Darling had supposed. Development of knowledge of the disease was exceedingly slow. The fifth known case—and the first to be reported in this country—was described in 1926 by Watson and Riley in Minnesota.[12] Even as late as 1945[5] only 71 cases had been reported in the literature. and in 1949 it was still considered by one investigator to be an almost uniformly generalized and fatal disease.[7]

It is now known to be a widely distributed disease; it has been recognized in at least 22 countries throughout the world and in at least 32 of the United States. The greatest density of incidence is in the east central part of the United States where. in certain locations. as high as 80 per cent of the population has been found to have positive dermal reaction to the histoplasmin antigen.[9]

The infection is now known to produce a great variety of clinical manifestations, ranging from an acute fulminating disseminated infection involving almost every organ of the body to the subclinical form which makes up the great majority of cases and which is identifiable only by the presence of calcifications in the lungs, spleen and elsewhere, and a positive reaction to skin test. The realization that there were great numbers of people in the east central part of this country who had pulmonary calcifications and negative reaction to tuberculin tests gave great impetus to the discovery of the usual mild or subclinical form of the disease.[2]

In the past ten years various syndromes caused by histoplasmosis infection have been described, including acute and chronic pulmonary infections, adrenal involvement producing adrenal insufficiency, cutaneous and ocular forms, naso-oral, laryngeal and pharyngeal types, lymphomatoid forms, enteritis and endocarditis.

It is now known that histoplasmosis can occur in man as a result of contact with infected soil or other forms of infected organic dust. The fungus can be transmitted from one animal to another. However. there are no acceptable case reports on record which demonstrate that transmission of the disease from animal to man or man to man has occurred. This, of course, does not rule out the possibility that such routes of transmission actually do exist. The portals of entry are chiefly the respiratory and alimentary tracts although primary infection may occur in the skin and elsewhere on the body membranes. Epidemics of acute disease are being recognized now as probably caused by mass exposures to the fungus in infected soil or dust.[4] As with coccidioides, laboratory workers frequently develop positive reaction to histoplasmin skin tests in the course of making culture transfers and cases of laboratory-acquired histoplasmosis have been reported.[11] In recent years a number of competent reviews of the disease have appeared,[1,7,9,10] and no attempt will be made here to cover the now extensive literature.

The purpose of this communication is to describe two cases of pulmonary histoplasmosis, both of which may have been in an active stage. The importance of recognizing histoplasmosis infections, particularly of the lungs, has been amply demonstrated by Puckett,[8] Peabody and co-workers,[6] and by Zimmerman.[13] They showed that pulmonary histoplasmosis is an established clinical entity which frequently mimics tuberculosis. The erroneous diagnosis of tuberculosis often leads to prolonged antituberculosis therapy and numerous other inconveniences both to the patient and the family.

Zimmerman's[13] observations are particularly revealing and worthy of note. He studied a series of 35 surgically resected discrete pulmonary granulomas which had previously been diagnosed by various contributing pathologists as having the macroscopic and microscopic characteristics of tuberculosis. By using the Ziehl-Neelsen stain for acid-fast bacilli and the periodic acid Schiff stain for fungi, Zimmerman was able to find acid-fast bacilli in six cases, coccidioides in three cases and histoplasma in 19 cases. No organisms were found in seven of the granulomata studied. He further stated that this study supports the impression among pathologists at the Armed Forces Institute of Pathology, who have been interested in this problem. that histo-

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plasma may be the most frequent cause of the granuloma commonly labeled "tuberculoma of the lung." It should now be recognized that it is possible by present culture methods and by the use of the periodic acid Schiff stain to identify the fungus in surgical specimens. These techniques should be employed in all cases where the cause of the resected granuloma is not clear.

REPORTS OF TWO CASES

Case 1. A 34-year-old office manager was seen April 26, 1954, because of an abnormality found in the left lung on routine Naval Reserve x-ray films. The patient was born in Houston, Texas, had spent some time during World War II in the South Pacific and gave no history of clinically recognizable pulmonary disease. During World War II, while he was in the service, routine x-ray films of the chest had been taken and no abnormality mentioned. Following the war he joined the Naval Reserve and in 1947 a calcification (Figure 1) was noted in the left midlung field on routine x-ray examination. Another routine x-ray film in 1953 showed an identical lesion. In a film taken in March 1954 (Figure 2) a soft tissue halo appeared around the calcification, and the calcification contained several small radiolucent areas. There was no history of recent cough, pain in the chest, loss of weight, night sweats or hemoptysis. The patient's father was said to have died of tuberculosis many years previously.

On physical examination the patient appeared well and there was no evidence of loss of weight. The hematocrit determination was 46 per cent. The erythrocyte sedimentation rate was 4 mm. in one hour (Wintrobe). Leukocytes numbered 9,800 per cu. mm.—31 per cent lymphocytes, 6 per cent monocytes, neutrophils 56 per cent and eosinophils 7 per cent. The urine was normal. An x-ray film of the chest one month later showed no significant change.

Results of skin tests were as follows: Purified protein derivative No. 2, negative; coccidioidin 1:100, negative; histoplasmin 1:1000, moderately positive reaction in 48 hours. The serum was sent to Dr. Samuel B. Salvin at the National Microbiological Institute, Hamilton, Montana, where complement fixation for histoplasmosis was positive in a dilution of 1:2.

On June 3, 1954, a wedge resection was done. Removed from the superior segment of the left lower lobe was a 5 cm. lesion in the substance of the lung and from the visceral surface of the pleura five plaques 1 to 2 mm. in diameter.

On pathological study a subpleural lesion 3 cm. in diameter was observed. It was centrally calcified and contained a cavity approximately 1 cm. in diameter filled with purulent material of greenish yellow color. Cultures of the purulent material yielded *Aerobacter aerogenes*. Acid-fast stains and culture for *Mycobacterium tuberculosis* were negative. Culture of the material for fungi also failed to produce any growth. Upon microscopic examination of the specimen, granulomatous lesions of varying

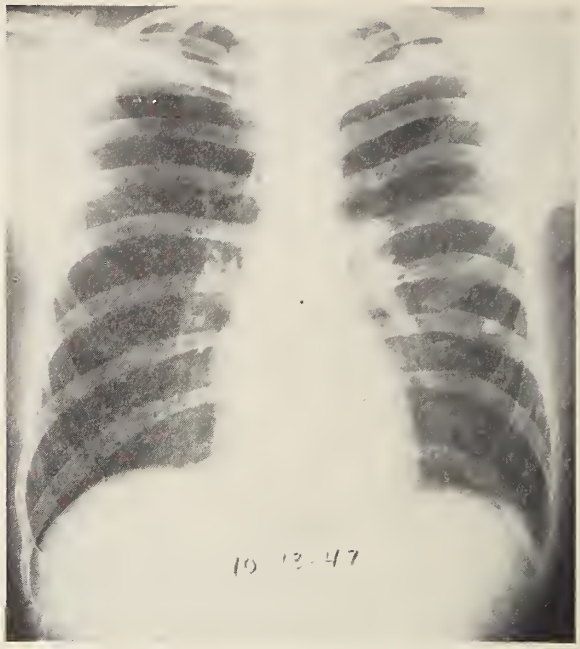

Figure 1 (Case 1).—Calcification in left midlung field.

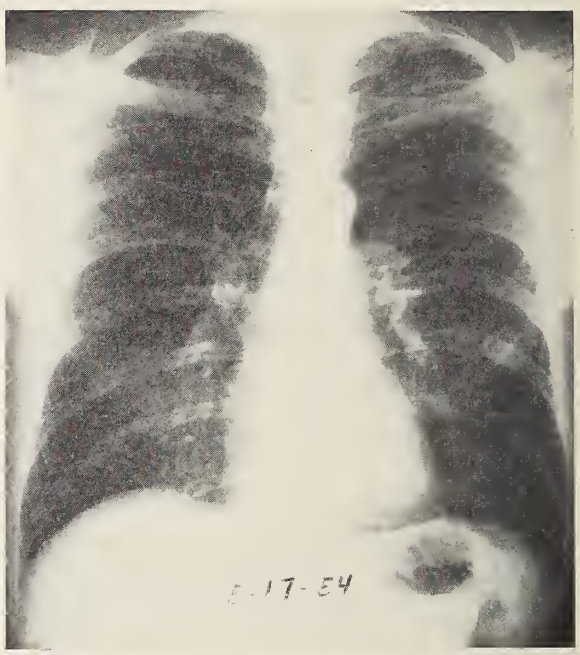

Figure 2 (Case 1).—Soft tissue halo around calcification, and small radiolucent areas in calcification.

size were noted, the largest one having caseous necrosis centrally and extensive old calcification. In the peripheral zone there was fibrosis and a dense cellular infiltrate composed primarily of what appeared to be large macrophages. Occasional giant cells of the Langhan's type were seen. Numerous satellite lesions were adjacent to the principal one, which in general showed complete healing and calcification centrally with dense collagen peripherally. A periodic acid Schiff stain was applied and what

appeared to be large histiocytes and macrophages contained Schiff positive material. In clusters of histiocytes adjacent to the large lesion were identifiable discrete round organisms filling the cytoplasm of the cells and having the morphologic characteristics of *Histoplasma capsulatum*.

The postoperative course was uneventful and at the last follow-up visit in October of 1955 the patient was in good health. An x-ray film of the chest showed only the scarring to be expected after thoracotomy.

Case 2. The patient, a 26-year-old white married woman, was observed for the first time on August 6, 1953, because of a report of abnormality in a routine minifilm. A 14″ x 17″ x-ray film of the chest (Figure 3) was taken and a mass was seen in the region of the left hilum. The patient was completely asymptomatic. There was no history of recent cough, pain in the chest, hemoptysis, night sweats or loss of weight.

The patient was born in Wyoming and was reared and lived in Northern California except for three years she spent in Nashville, Tennessee, from 1948 to 1950. A minifilm taken in Nashville in 1950 was also reported as abnormal and for that reason a large film was taken at that time but the patient was not examined nor was any follow-up study suggested.

Between 1944 and 1948, the patient had had several episodes of dyspnea and wheezing on exertion which were diagnosed as asthma but no treatment was given. During the stay in Nashville, the patient had had two short attacks of "laryngitis." In 1952 she had a short episode of "pleurisy" on the left side which was not associated with fever and which resolved rapidly after the application of local heat.

The patient's father had arrested pulmonary tuberculosis and a maternal aunt had died of pulmonary tuberculosis in 1918.

The patient was well developed and well nourished and did not appear ill. The temperature was 98.6° F. The pulse rate was 80 and the rhythm regular. The blood pressure was 120/80 mm. of mercury. Body weight was 143 pounds and the patient was 5 feet 9½ inches tall. The trachea was midline. A small, soft, freely movable, nontender node was palpable in the left axilla. No abnormalities were noted upon examination of the heart and lungs. The liver and spleen were not palpable.

Erythrocytes numbered 4,070,000 per cu. mm. of blood and the hemoglobin content was 13.0 gm. per 100 cc. Leukocytes numbered 10,300 per cu. mm. and the differential was within normal limits. The erythrocyte sedimentation rate was 15 mm. in one hour (Wintrobe). The urine was normal. A serologic test for syphilis was negative. Total serum protein was 7.2 gm. per 100 ml. with a normal albumin-globulin ratio. X-rays of the hands and feet revealed no evidence of osseous change to suggest the presence of sarcoidosis. The x-ray film of the chest which had been taken in Nashville three years earlier was obtained and by comparison it was observed there

Figure 3 (Case 2).—Mass in region of left hilum.

had been no essential change in the left hilar mass in the interim.

Results of skin tests were as follows: Purified protein derivative No. 1, negative; purified protein derivative No. 2, slightly positive; coccidioidin 1:100, negative; histoplasmin 1:1000, very strongly positive.

Bronchoscopic examination was done and the bronchial tree appeared normal. A left supraclavicular fat pad biopsy was performed and a lymph node 1 cm. in size was obtained for section. Both the routine hematoxylin and eosin stain and the periodic acid Schiff stain were used for microscopic studies and no evidence of disease was observed.

Several specimens of serum were sent to Dr. Samuel Salvin at the National Microbiological Institute in Hamilton, Montana, for examination for antibodies against *Histoplasma capsulatum*. In September, 1953, Dr. Salvin reported complement-fixing antibodies in a titer of 1:32 with the whole cells of the yeast phase as antigen. At that time, the serum also showed a trace of precipitins. In October, 1953, the serum again showed a positive complement-fixation in a dilution of 1:32, as well as a trace of precipitins. No fixation of complement occurred in the presence of antigens of *Blastomyces dermatitidis* or *Coccidioides immitis*. In January of 1954 the complement-fixation test was positive in a dilution of 1:8 and no precipitins were detectable. In March, 1954, results of complement-fixation and precipitin tests were negative. The last test of serum was in April, 1955, and again there was positive complement-fixation in a dilution of 1:8; no precipitins were detectable.

During this period of changing titer of antibody levels, the clinical condition of the patient did not change significantly except that she became pregnant

and had a normal spontaneous delivery in July, 1954. Serial x-ray films of the chest taken at intervals of six months continued to show no change in the left hilar mass. A histoplasmin skin test in a dilution of 1:1000 was performed on the patient's child in July, 1955, and there was no reaction.

DISCUSSION

There is much in the histories of both the cases here reported to suggest that in both the infection originated outside California, in one either in the South Pacific or eastern Texas, and in the other in Tennessee. However, in both cases there was evidence to suggest that active infection may have been present. In Case 1, definitive operation was indicated, and in Case 2 careful observation. In Case 1 the identification of the causative factor in the lesion obviated a prolonged course of antituberculous treatment as well as the problem of examining the family of the patient for tuberculous infection. The patient was relieved of the stigma of tuberculosis. In Case 2 it was of great importance to rule out tuberculosis, sarcoidosis and malignant disease, and this was accomplished by the identification of the etiological agent.

It is generally assumed that the histoplasmin skin test has the same significance in relation to histoplasmosis as the tuberculin skin test has to tuberculosis and as the coccidioidin skin test has to coccidioidomycosis. A positive reaction to histoplasmin skin test almost always means past or present infection with *H. capsulatum*. In retesting of thousands of persons who were nonreactors to histoplasmin, it has been shown that sensitization with histoplasmin does not bring about conversion from a negative to a positive intradermal reaction. It has also been shown that false positive reaction to histoplasmin skin tests can be obtained in the presence of infections with *Blastomyces dermatitidis*, *Coccidioides immitis* and *Candida albicans*, and are evidently due to cross-sensitivity with fungi. Similarly, it is known that the sensitivity to histoplasmin is occasionally depressed by the acute phase of the disease, by fever and by old age and that changes in skin sensitivity can occur during the illness even in verified cases.

Serological tests, also, may be of help in confirming a diagnosis of histoplasmosis. However, the results of these tests are not infallible and there are very few laboratories that have accumulated sufficient experience with the tests. In Puckett's[8] series of 22 proved cases of pulmonary histoplasmosis, complement-fixation studies were done in 12 cases and in five the results were negative. The highest titer reported in the seven cases with positive reaction was 1:20. It is important for a clinician to know that the complement-fixation test reaction may be negative during the acute phase of the disease since antibody production may be too low to be measured by present techniques. If serious consideration is being given to the diagnosis of histoplasmosis, repeated serological studies should be performed before a negative report is considered significant. It is generally felt to be true, although exceptions have been reported, that a rising titer indicates dissemination and a falling titer indicates clinical improvement of the disease.[1,9]

SUMMARY

Two cases of pulmonary histoplasmosis have been described. The importance of identifying the etiological agent in cases of intrathoracic granulomas is emphasized.

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Bran as a Precipitating Factor in Small Bowel Obstruction

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INTRALUMINAL BOWEL OBSTRUCTIONS are not particularly uncommon. Numerous foods in daily use have been found causing obstruction. However, not since 1940 has there been mention in the literature of bran as a cause. In that year Fantus and Kapstein[2] made a thorough review of the literature and could find reports of only four cases of bowel ob-

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struction which had definitely been caused by bran. In three of these cases the obstruction was preceded by gross intestinal disease. The fourth case was not sufficiently well described to permit analysis as to its nature, but a predisposing cause was probably present: The patient had previously had two abdominal operations. Fantus and Kapstein came to the conclusion that bran was not likely to produce obstruction unless an organic predisposing cause was present, and urged that its use should be definitely contraindicated in the presence of intestinal ulceration, stenosis or adhesions. The first case of obstruction definitely ascribed to bran was reported by Butzke, Barber, Boswell and Drewitt[1] in 1928. The obstruction was in the sigmoid colon and perforation of the bowel above it caused fatal generalized peritonitis. As a predisposing disease the patient had amebic ulceration.

The following case fits in well with the conclusions of Fantus and Kapstein.

REPORT OF A CASE

A 54-year-old white rigger was admitted to St. Mary's Hospital November 24, 1954, with the chief complaint of severe cramping pain for three days in the left lower quadrant of the abdomen. About three days before admission the patient had eaten at breakfast about two cupfuls of bran* with milk. Since that time the patient had been unable to retain food in the stomach and had vomited many times. Two days before admission he had taken an enema and although a fair amount of fecal material was defecated, pain was not relieved. On the evening of the day before admittance to hospital he had a spontaneous bowel movement but the amount of fecal material passed was described as scant, and gas had not been passed per rectum since that time.

Thirty-seven years previously the patient had had a lower abdominal operation. He did not know why the operation had been done or what, if any, organs had been removed. He remembered only that at that time he had had severe abdominal pain. Since about 1928, the patient had attacks similar to those described in the present illness, but never so severe, and they had subsided spontaneously.

Upon physical examination the patient was observed to be anxious and thin and in obvious abdominal distress. The rectal temperature was 100.0° F., the pulse rate 88, respirations 16 per minute. The blood pressure was 150/90 mm. of mercury. The tongue was moist. Moderate distention and generalized tenderness of the abdomen were noted, but there was no definite rebound tenderness. There was a 4 cm. subumbilical scar, well healed. Bowel sounds were hyperactive and high pitched. There were no palpable masses, and no evidence of free fluid or herniation. No abnormalities were observed upon rectal examination.

The hemoglobin content of the blood was 14.2 gm. per 100 cc. and erythrocytes numbered 4.95 million per cu. mm. Leukocytes numbered 11,700 per cu. mm.—67 per cent polymorphonuclear cells (segmented 55 per cent and nonsegmented 12 per cent), 1 per cent eosinophils and 32 per cent lymphocytes. No abnormalities were noted in the urine.

Flat, upright, and lateral films of the abdomen showed a collection of gas-filled loops in the left upper quadrant. There was very little gas in the colon although some fecal material was seen in the rectum. Fluid levels were noted within the loops of the small bowel. There was no evidence of free air in the peritoneal cavity.

TREATMENT

The patient was given 1,000 cc. of 5 per cent dextrose in saline solution intravenously. A Levin tube was passed and continuous nasogastric suction was started. At operation a right paramedian paraumbilical incision 18 cm. long was made. Entrance into and orientation within the abdomen were exceedingly difficult because of dense adhesions of bowel to the peritoneum. Eventually, a mass 7.5 cm. x 15 cm. was located. It appeared at first to be retroperitoneal. In the course of manipulation, the mass ruptured and thereupon it was seen to be small bowel. The mass contained dried fiber-like material that looked like dry manure. Just distal to the mass, an adhesive band stretched across the bowel. This band was cut and the dry manure-like material was removed proximally and distally as carefully as possible. The tear in the bowel was closed with a Connell suture of 00 chromic catgut on an atraumatic needle, and the serosa was closed with interrupted Lembert sutures of 60 cotton. Both were done in a transverse manner. There was no gangrenous bowel. The abdominal wall was then closed in layers and reinforced with retention sutures of No. 28 steel alloy wires. A Penrose drain was placed in the inferior end of the incision into the peritoneal cavity before closure was carried out.

After operation, continuous nasogastric suction was maintained and appropriate administration of fluids and antimicrobial drugs was carried out. The Levin tube was removed on the third postoperative day and the drain on the sixth postoperative day. Except for a flare-up of acute prostatitis on the tenth postoperative day the patient made uneventful recovery.

By studies in the pathology laboratory it was determined that the material removed at the time of operation was desiccated bran. Presumably, from the appearance of the patient's peritoneal cavity at operation he had had peritonitis at the time of the first abdominal operation.

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*All Bran (Kellogg).

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Perforated Gastric Ulcer Complicating Prednisone Therapy

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PEPTIC ULCER has been reported as a complication of prednisone therapy,[1] as has one case of perforating duodenal ulcer.[2] So far as could be determined there has been no previously published report of perforated gastric ulcer in a patient receiving prednisone therapy.

REPORT OF A CASE

The patient, a woman 46 years of age, had been receiving steroid therapy for rheumatoid arthritis, except for brief intervals, since 1950. At first cortisone was used and while taking it she had progressed from a state of enforced inactivity to one of active full time work as a waitress. There was no evidence of side effects other than a rounding of the face. Hydrocortisone became available and the patient was changed to it in 1954. On May 14, 1955, therapy was begun with prednisone (Meticorten) and 18 mg. a day was required for control of arthritic symptoms. Shortly before 2 o'clock in the afternoon of December 30, 1955, the patient walked into the authors' office, about 30 minutes after noting the onset of generalized abdominal distress described as "gas." She had experienced, with the onset of abdominal symptoms, a brief period of faintness. She said she had had no previous gastrointestinal symptoms other than occasional epigastric burning that was readily relieved by taking a glass of milk or a little soda bicarbonate. This symptom had never been frequent or severe enough, in the patient's opinion, to warrant mentioning it to a physician.

Upon examination the patient was observed to be in moderate distress. She had loosened her dress at the waist because she felt "too full of gas" to be comfortable with anything constricting about her. She was afebrile. The blood pressure was at its usual level of 140/80 mm. of mercury. The pulse rate was 86. Characteristic fusiform rheumatoid swelling of the fingers was noted, and there was some flexion contracture with restriction of motion of the fingers, wrists, elbows and ankles. There was also a suggestion of facial rounding. The abdomen was only minimally distended—not as much as might be expected from the patient's complaint of being so full of gas she could hardly breathe. Peristalsis was slightly hyperactive. There was moderate bilateral lower abdominal tenderness on palpation.

The patient was not permitted to take anything by mouth. Codeine was given parenterally to relieve discomfort. Heat was applied to the abdomen. In spite of these measures, by 8 p.m. the patient had become more uncomfortable. Generalized muscular rigidity of the abdomen was noted and the rebound phenomenon was present. The epigastric region was acutely tender on palpation. Bowel sounds were active. The temperature was 98° F., the pulse rate 80, and respiration 28 per minute.

Submitted June 4, 1956.

The hemoglobin content was 11.4 gm. per 100 cc. of blood. Leukocytes numbered 21,500 per cu. mm. —92 per cent neutrophils and 8 per cent lymphocytes. Serum amylase was 128 units. An x-ray film of the abdomen taken with the patient standing showed free air under both leaves of the diaphragm. The diagnosis was ruptured viscus, probably due to peptic ulcer.

At laparotomy a perforation 4 mm. in diameter was observed in the prepyloric portion of the anterior wall of the stomach along the lesser curvature. A biopsy specimen was taken from the edge of the ulcer, and the perforation was closed without difficulty. The abdomen was closed without drainage. Steroid therapy during and after operation consisted of cortisone intravenously and intramuscularly, with gradual reduction of dosage. Recovery was uneventful and the patient was discharged from the hospital the eighth postoperative day on a rigid ulcer regimen.

The frequency of development of peptic ulcer during prednisone therapy is not known. Fentress and coworkers[2] reported three patients with peptic ulcer in a group of 18 receiving prednisone therapy. Bollet and coworkers[1] reported the same incidence in a group of the same number of prednisone-treated patients. For the combined group of 36 treated patients the incidence of peptic ulcer was 17 per cent.

Prednisone therapy masked symptoms up to the time of perforation, and even then made diagnosis more difficult. The three patients with peptic ulcer in the series reported upon by Bollet were all without referable symptoms. Fentress and coworkers, in the case they reported, had not recognized the presence of duodenal ulcer, and it was at least 12 hours after perforation before the clinical findings were such that they suspected ruptured viscus. In the present case also, the presence of ulcer was not suspected and the diagnosis of perforation was similarly delayed. Since the usual symptoms and findings of perforation may be obscured by the pharmacologic action of corticoids, it would appear that earlier recognition of this serious complication will require a heightened index of suspicion of peptic ulcer and its complications and a search for intraperitoneal air when unusual abdominal symptoms develop during prednisone therapy.

A case is reported in which perforation of a gastric ulcer, which was not known to be present, occurred in a patient receiving long-term prednisone therapy for rheumatoid arthritis. The relatively frequent development of asymptomatic peptic ulcer in patients receiving corticoids is pointed out, and the masking of early symptoms of perforation is emphasized.

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Clonorchiasis of the Biliary Tract

A Report of Two Cases

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Clonorchiasis or Chinese liver fluke infestation of the biliary tract occurs as an endemic disease in Japan, Korea, China and Indo-China but has rarely been reported within the continental limits of the United States. Occasional cases have been reported in European and Far Eastern medical journals.[1,3,4]

Stitt and co-workers[5] reported that liver fluke infestation had been reported in fewer than 50 cases in Europe, and in only two had a fluke been surgically removed from the common bile duct. Infestation with this parasite as shown by stool examination has been recorded in Chinese inhabitants of the United States, Cuba and India, and in native Hawaiians.

Increasing frequency of infestation with *Clonorchis sinensis* in persons in this country may be expected due to the exposure of American personnel, both civilian and military, to the Orient. The disease is acquired by the ingestion of insufficiently cooked infected fish. Early recognition and treatment is important to prevent the late complications of the disease.

Reports of two cases in which the symptoms complained of were those of chronic biliary tract disease are presented herewith. In both cases, typical ova were found in the stool before operation. In one, a mature fluke was found in the common bile duct at the time of operation; in the other, ova were noted in a biopsy specimen of liver.

REPORTS OF CASES

Case 1. A Chinese male, aged 56 years, born in China, emigrated to the United States 30 years previously. He had had symptoms of gallbladder disease for three years. Nonfunctioning of the gallbladder was demonstrated by x-ray examination. There was no history of jaundice.

The hemoglobin content of the blood was 16.5 gm. per 100 cc. Erythrocytes numbered 5,560,000 per cu. mm. and leukocytes 6,500—neutrophils 61 per cent, lymphocytes 26 per cent, and eosinophils 5.5 per cent. Results of urinalysis were within normal limits. Ova typical of *Clonorchis sinensis* were observed in a fecal specimen.

At operation the gallbladder was observed to be thick-walled and filled with numerous calculi. The cystic duct was thin-walled and slightly dilated. The liver appeared grossly normal. No specimen for biopsy was taken. No stones were found in the common duct but a small, flat, black, leaf-shaped object was scooped out from the lumen. A routine cholecystectomy was performed and a T-tube was inserted into the common duct. The patient made an uneventful recovery and was sent home with prescription of enteric-coated gentian violet.

The pathologist's report described the specimen from the common duct as a leaf-shaped fluke measuring 6 x 3 x less than 1 mm. Eggs were visible within the fluke on microscopic examination, and eggs were also found in a subsequent examination of bile obtained from the T-tube. Miracidia were released by immersing the ova in a solution of methylene blue and borax. The liberated miracidia were observed to swim about vigorously. Microscopically observed, the gallbladder wall was seen to be thickened by fibrosis and round cell infiltration, but the lining epithelium was intact.

Case 2. The patient was a Chinese male 43 years of age who had been born in China but had lived in the United States for 20 years. He had had symptoms of gallbladder disease for seven years, with a recent episode of jaundice suggestive of extrahepatic obstruction due to stones.

The hemoglobin content was 18.0 gm. per 100 cc. of blood. Erythrocytes numbered 6 million per cu. mm. and leukocytes 9,400 per cu. mm.—neutrophils 44 per cent, lymphocytes 18 per cent, basophils 2 per cent, and eosinophils 35 per cent. Upon urinalysis a four plus reaction for bile was noted but no reaction for urobilinogen. The icterus index was 151 units, cephalin flocculation 3 plus, and alkaline phosphatase 8.2 King-Armstrong units. A plain film of the abdomen showed mild ileus. Ova typical of *Clonorchis sinensis* were observed in a specimen of stool.

A preoperative diagnosis of "extra hepatic obstructive jaundice probably due to common duct stones" was made and surgical exploration was carried out. The gallbladder was thick-walled and full of calculi. Four calculi were removed from a dilated common duct, and a fifth stone, impacted in the ampulla of Vater, was removed by duodenotomy. Cholecystectomy was done and a T-tube was inserted into the common bile duct. Upon examination of a specimen of liver (Figure 1) connective tissue proliferation and infiltration of eosinophils around the bile ducts was noted. There was necrosis of the lining epithelium in the larger ducts, and lumina were filled with pink staining debris and operculated ova of *Clonorchis sinensis*. There was fibrous thickening of the gallbladder wall consistent with chronic cholecystitis. The calculi were carefully sectioned and examined and no ova were observed.

DISCUSSION

Clonorchiasis, better known as Chinese liver fluke infestation, is caused by a fluke, *Clonorchis sinensis*, which has an affinity for the biliary tract. Infestation with this fluke is acquired by ingestion of insufficiently cooked infected fish. The parasite is a slender, leaf-shaped trematode 10 to 25 mm. in length and 3 to 5 mm. wide. The operculated ova of *Clonorchis sinensis* contains fully-developed miracidia

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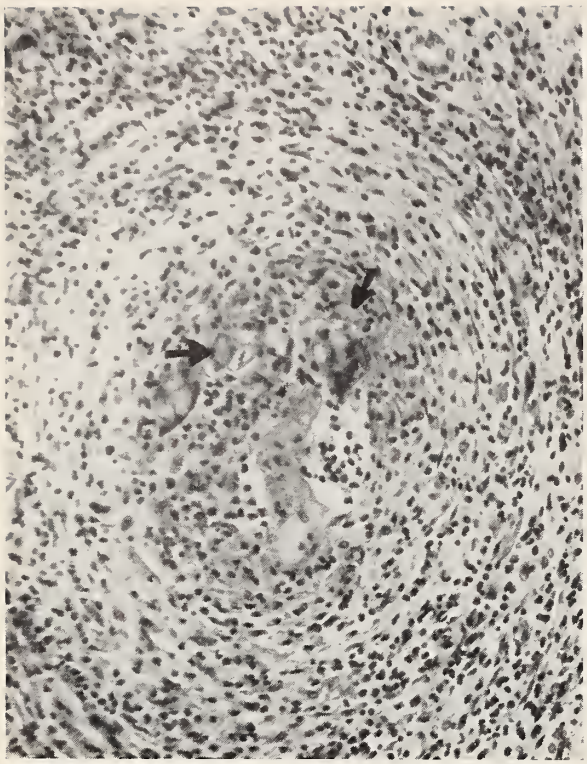

Figure 1.—Arrows point to ova in bile duct of liver. Note surrounding fibrosis and inflammatory cell infiltration, predominantly eosinophils (high power magnification).

and are said to be among the smallest ova passed by man. The eggs laid in the bile passages by the adult are discharged into the duodenum and pass into the stools. To complete the cycle, the ova must reach fresh water where they are ingested by certain species of snails to undergo a metamorphosis into a free swimming form known as cercariae. Cercariae in turn penetrate fresh water fish, and develop over a period of several weeks into cysts which are infectious to man. When insufficiently cooked infected fish are ingested by man, the wall of the cyst is broken down by the gastric juice and the organism that is liberated then migrates to the radicles of the biliary tree by ascending the common bile duct. Presence of adult flukes in the biliary tree accounts for the subsequent proliferation of the biliary epithelium, fibrosis and, rarely, cirrhosis of the liver.

Whether or not cholecystitis and cholelithiasis result secondarily from the parasitic infection in the cases here reported is not known. The possibility was considered that the parasite might have acted as a nidus for the stone formation but no evidence to support the supposition was found on careful sectioning of the calculi. It is assumed, therefore, that cholecystitis and cholelithiasis were incidental in the two cases reported. On the other hand, no evidence exists to deny the possibility that the toxin liberated by the parasite may not be one of the exciting factors to account for the disease in the gallbladder. No references are available in the literature as to the relationship between diseases of the gallbladder and infestation with *Clonorchis sinensis*.

In the cases presented, one of the patients had not been in China for 30 years and the other for 20 years. It seems doubtful that the liver fluke can survive this length of time without reinfection. The history suggests that reinfection may have occurred by the ingestion of infected fish from China in the second case, but the history is incomplete in the first case.

Suspicion of clonorchiasis should be aroused in the case of a patient, especially an Oriental, with a history of ingestion of raw fish and symptoms of gallbladder disease with or without jaundice. The finding of ova of *Clonorchis sinensis* in the stools is diagnostic of infestation. An increase in the eosinophil cells in the blood is usual. The diagnosis may be confirmed by recognition of adult flukes in the biliary tract at the time of operation or by biopsy of a specimen of liver.

In treatment, gentian violet in enteric-coated tablets is the drug of choice.[5] It is said to be curative in early infestations and may be beneficial in advanced cases.

SUMMARY

Two cases of clonorchiasis of the biliary tract in patients living in the United States are reported. Both patients had symptoms suggestive of chronic cholecystitis with cholelithiasis. The diagnosis was confirmed by finding characteristic ova in the stools in both cases and by observing a mature fluke in the biliary tree in one case and by biopsy of the liver in the other.

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EDITORIAL

Cancer Quackery

FOR THE SECOND TIME in eight months a federal court has determined that the "Hoxsey cancer treatment" is worthless and, in so doing, has focused attention on the many variations of cancer treatment foisted on the public throughout the country.

Simultaneously, Mr. George P. Larrick, Commissioner of Food & Drugs, has again taken off the gloves and landed a solid — and public — punch against this particular form of therapy; he labels it as "worthless" and decries the fact that "consumers" are being "deceived by the false claims for the Hoxsey liquid medicines and pills."

Mr. Larrick's current statement follows one issued by him earlier in 1956, when—the first such action in the history of the U. S. Food & Drug Administration—he lashed out at the quackery of the Hoxsey treatments.

His words fall on sympathetic ears in California, where for some years the Cancer Commission of the California Medical Association has waged an unrelenting war on the many forms of cancer therapy which are unproved and without scientific backing but which, apparently, are a fine source of income for their promoters.

In the past few years the Cancer Commission has released public reports on four purported cancer cures or treatments that have been found to lack any scientific value. The policy of the Cancer Commission has consistently been to offer its services to the promoters of cancer therapy of any type. With the cooperation of the promoter, the Commission stands ready to subject any substance to an objective scientific testing in a university or a research hospital. If a so-called cancer cure can be shown by this kind of investigation to have some real worth, the Cancer Commission would be the first body to want to know about it and to further the use of the treatment. It is interesting to note that the promoters of these "cures" are usually unwilling to release any of their material for such objective testing.

It is also interesting to observe that these promotors owe their practices to word-of-mouth advertising that crosses state lines and brings in patients from all parts of the country. Possibly on the theory that a prophet is without honor in his own house, the cancer miracle man in Texas draws patients from California and his California counterparts count on Texans.

The Hoxsey case bears out this phenomenon. Hoxsey has operated in Texas for some 30 years and has handled patients from all parts of the nation. His treatment has been advertised to the point of notoriety and physicians in all areas know of the worthless character of it. Despite this, and despite the blunt condemnation which has been heaped on the Hoxsey shoulders, cancer victims or those who fear they have the disease continue to journey to his Dallas headquarters for a series of treatments.

To the everlasting credit of the Food & Drug Administration, federal officers have long sought a way to put a stop to this patent quackery. Under the terms of a U. S. Supreme Court decision in 1948, the F.D.A. was finally enabled to file an injunction suit in 1950 and to receive a decree from the federal court in Dallas in 1953. At about that time Mr. Hoxsey branched out with a second "clinic" in Portage, Pennsylvania. This one was so widely publicized that it eventually rated half a dozen photographic pages in *Life* magazine.

Still more recently, Hoxsey has been rumored as preparing to open a third "clinic" in California, possibly in Los Angeles, possibly in Santa Barbara. To date this has not materialized but the rumor persists and the possibility appears ever present.

In his new blast at the Hoxsey system, Commissioner Larrick stated that a new injunction will be sought to prevent the interstate shipment of Hox-

sey's pills. The half million pills ordered destroyed by a federal judge in Pittsburgh can easily be replaced. Mr. Larrick said that his department intends to "use every legal means within our power to protect consumers from being victimized by this worthless treatment." He also called attention to the fact that government evidence in the recent Hoxsey case proved that many of the "cured cases" presented by Hoxsey were people "who either did not have cancer, or who were adequately treated before they went to the Hoxsey clinic, or who died of cancer after they had been treated there." This is typical of many advertised forms of therapy for many things—cancer has no patent on this promotional technique.

The C.M.A. Cancer Commission has long since adopted the same attitude as the Federal Food & Drug Commissioner, namely, to use all legal means to protect the public against cancer quackery. Its offices are always available for the scientific and objective testing of proposed therapeutic procedures. Its current recommendations for cancer treatment are those which have had universal scientific acceptance—surgical operation or irradiation or both.

When further or better forms of therapy are proved, the Cancer Commission will be in the forefront in urging their use. Meanwhile, the war on quackery in this highly emotional and susceptible field of disease cannot be allowed to lag.

Editorial Comment . . .

Fixed Antibiotic Combinations

CURRENTLY the medical profession is being deluged with an unprecedented amount of advertising for preparations containing combinations of antimicrobial drugs. According to the publicity such preparations are "indicated for most common infections" or "dependably effective," thus relieving the physicians of responsibility for attempting a specific etiologic diagnosis; they are "generally well tolerated" or have "a new maximum of safety and toleration," thus reassuring the physician that he will not cause the patient discomfort from side effects; they "prevent the emergence of microbial resistance" and give "superior control of the changing microbial population," making the physician feel that he is protecting his patient by every known means. Often the advertisement mentions the "synergism" attributed to the particular drug combination, usually without defining the term or its meaning, thus attracting the physician's hope for increased potency.

This flood of preparations containing mixtures of antimicrobial drugs probably will significantly increase the total consumption of antibiotics. Concomitantly it may greatly increase the problems resulting from the large scale misuse of antibiotics and diminish the usefulness of these drugs. The undersigned therefore believe it to be their duty to call to the attention of physicians some facts and problems attendant upon this promotional pressure for the use of combinations of antimicrobial drugs.

In a large majority of common ailments, particularly most respiratory infections, antibiotics are not indicated. In infections caused by a demonstrable specific bacterial agent a single antimicrobial drug is usually the proper choice. Combinations of antibiotics could be employed logically only in the following situations:

1. Mixed bacterial infections—as in wounds, for example.

2. Clinical situations where the rapid emergence of bacteria resistant to one drug may impair chances for cure. The addition of a second drug sometimes delays the emergence of resistance. This effect has been demonstrated in tuberculosis but in other infections the evidence for its occurrence is questionable. However, in staphylococcus infections streptomycin, erythromycin, or novobiocin should usually not be used singly because resistance is likely to emerge rapidly.

3. In some infections the simultaneous use of two drugs gives an effect not obtainable by either drug alone. Such an instance is endocarditis due to *Streptococcus fecalis* (Enterococcus), where the combined effect of penicillin and streptomycin is essential for cure. Such situations are rare. No fixed drug combination regularly results in such a desirable

combined effect. On the contrary the combined action of any drug pair is unpredictable and may apply only to a single strain of bacteria. Thus it is neither accurate nor informative to talk of a "synergistic" drug pair, without specifying a given organism.

The frequent administration of combinations of antibiotics is to be discouraged because:

1. None of the currently advertised combinations have been proved by laboratory or clinical study to be more effective than one of the components.

2. The fixed ratio of drugs is unlikely to be suited to the needs of a given situation even if the individual constituents are appropriate.

3. Sensitization, hypersensitivity reactions, and other toxic side effects occur with each drug and are more frequent when several agents are employed simultaneously.

4. The claim is not justified that drug combinations will prevent the emergence of drug resistant bacteria. At best the combination will only delay this process, permitting a more prolonged chemotherapeutic effectiveness.

5. Available information demonstrates that the widespread use of combinations in hospitals eventually leads to an *increase* in the number of strains of bacteria resistant to *both* components of the mixture.

6. The advertisements of most of the recently introduced combinations are based upon dubious testimonials rather than facts established by experienced clinical investigators.

Physicians are urged to consider the risks and disadvantages of prescribing fixed drug combinations and to retain to themselves the prerogative of free choice of drugs for their patients based upon sound evidence and suited to the needs of the individual case.

Henry D. Brainerd
Ernest Jawetz
Lowell A. Rantz

Letters to the Editor . . .

In your California Medicine, page 278, Oct. 1956, appears a notice of a Surgical Refresher Course, dedicated to the memory of our son, the late Dr. Francis Traill Hodges, under the sponsorship of the San Francisco Academy of General Practice, to be given by the Surgical Service of the VA Hospital, at Ft. Miley, San Francisco, by members of the Departments of Surgery, Stanford University, and the University of California School of Medicine. October 23 to November 27, 1956.

As we are unable to personally contact the members of these various groups, might it not be possible to insert some suitable note of thanks—if consistent with your editorial policy—expressing our appreciation and gratitude to all of Frank's friends, who made this fine, educational undertaking and memorial possible?

Sincerely,
Fletcher Hodges, M.D.

Indianapolis, Indiana.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 422nd Meeting of the Council, Los Angeles, Ambassador Hotel, November 10, 1956.

The meeting was called to order by Chairman Lum in the Colonial Room of the Ambassador Hotel, Los Angeles, on Saturday, November 10, 1956, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Vice-Speaker O'Neill, Secretary Daniels, and Councilors West, Wheeler, Wadsworth, Pearman, Harrington, Sherman, Lum, Bostick, Teall, Reynolds, Varden, Heron and Rosenow.

Absent for cause, Speaker Doyle, Editor Wilbur and Councilors Loos, McPharlin, Kirchner and Carey.

A quorum present and acting.

Present by invitation were members of the Board of Trustees of California Physicians' Service, including Rt. Rev. Msgr. T. J. O'Dwyer, Doctors Leon O. Desimone, T. Newton Foster, Bert Halter and Dave Dozier and Messrs. Thomas Hadfield and Robert L. Hornby.

Also present by invitation were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff; legal counsel Howard Hassard; Messrs. Ben H. Read and Eugene Salisbury of the Public Health League of California; Rollen Waterson, consultant; Doctors A. E. Larsen and William Gardenier and Messrs. Etchel Paolini, Richard Lyon, Wilson Walberg and K. L. Hamman and Miss Shirley Harcourt of CPS staff; Doctors Joseph F. Sadusk, Jr., Francis J. Cox, Alfred A. Auerback, John Rumsey and Justin J. Stein; Richard Blum, Ph.D.; and county society executive secretaries Scheuber and Dockterman of Alameda-Contra Costa; Jensen of Fresno, Geisert of Kern, Marvin of Riverside, Foster of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson of San Joaquin, Wood of San Mateo, Donovan of Santa Clara and Devere of Stanislaus, and legal counsel Fred O. Field of the Los Angeles County Medical Association.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 421st Council meeting, held September 30, 1956, were approved.

(b) On motion duly made and seconded, actions of the Executive Committee, taken in telephone conferences, in effecting a settlement of a dispute among blood banks, were approved and confirmed.

2. *Membership:*

(a) On motion duly made and seconded, a report of membership as of November 7, 1956, was received and ordered filed.

(b) On motion duly made and seconded, 34 members who had become delinquent through nonpayment of dues and had subsequently made such payment, were voted reinstatement as active members.

(c) On motion duly made and seconded in each instance, eight (8) applicants were voted Retired Membership. These were: Richard O. Bullis, Charles Coghlan, Joseph E. Jensen, Edmond M. Lazard, John P. Mortensen, Los Angeles County; L. J. Langlois, San Diego County; Wm. Otis Callaway, San Mateo County; David B. Williams, Stanislaus County.

(d) On motion duly made and seconded in each instance, five (5) applicants were voted Associate

DONALD A. CHARNOCK, M.D. . . . . President
FRANK A. MacDONALD, M.D. . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
J. NORMAN O'NEILL, M.D. . . . . Vice-Speaker
DONALD D. LUM, M.D. . . . . Council Chairman
ALBERT C. DANIELS, M.D. . . . Secretary-Treasurer
IVAN C. HERON, M.D. . Chairman, Executive Committee
DWIGHT L. WILBUR, M.D. . . . . Editor
JOHN HUNTON . . . . . Executive Secretary
General Office, 450 Sutter Street, San Francisco 8
ED CLANCY . . . . Director of Public Relations
Southern California Office:
417 South Hill Street, Los Angeles 13 • Phone MAdison 6-0683

Membership. These were: Beverly G. Wagner, Sacramento County; Harry L. Bramwell, San Joaquin County; Cyrus Pachter, San Diego County; John F. Fitzgerald, John Cameron Wrye, San Luis Obispo County.

(e) On motion duly made and seconded, reductions of dues were voted for four applicants.

3. *Financial:*

A report of bank balances as of November 7, 1956, was presented and ordered filed.

4. *Medical Care for Military Dependents:*

(a) Doctor John M. Rumsey, Mr. Richard Lyon of California Physicians' Service and legal counsel Hassard reported on and discussed a contract which had been negotiated with the Department of Defense by the Association and C.P.S., to provide medical, surgical and hospital services for dependents of military personnel in civilian facilities. Under this contract, C.M.A. would agree to encourage physicians to provide their services under an established schedule of fees and C.P.S. would handle all claims and financial services.

On motion duly made and seconded, it was voted to approve the contract and the schedule of fees accompanying it and to authorize the Executive Committee to supervise additional negotiations which may appear advisable.

On motion duly made and seconded, it was voted to place prime emphasis in any renegotiations on this contract on the omission of provision for the services of physicians who make initial examinations and diagnoses of patients whose care is continued under such physicians, in order not to deprive such patients of these services.

(b) On motion duly made and seconded, it was voted to express commendation for General Omar N. Bradley and his committee for adopting a policy, in reviewing veterans' affairs, that the medical care of veterans suffering from nonservice connected disabilities should be a community responsibility rather than one of the Veterans' Administration.

5. *Commission on Medical Services:*

(a) The chairman read a report by Doctor H. Gordon MacLean on a meeting held with representatives of the State Department of Social Welfare and the State Department of Public Health relative to state participation to activate new federal provisions for medical care for the aged, children and other categories of recipients of federal and state assistance. Report was also made on another meeting at which possible legislation was considered as a means of providing state funds to match federal grants for such assistance.

Doctor MacLean's report recommended that the Council approve in principle the provision of medical care for the aged and the indigent and authorize the committee to continue working with state authorities on a program which would place its main stress of medical services in the office or the home.

On motion duly made and seconded, it was voted to endorse the policy of stressing office and home care, to use California Physicians' Service for administrative services and to refer the entire matter to an appropriate committee for early study and report.

(b) On motion duly made and seconded, it was voted to combine the functions and activities of the present Committee on Indigent Care and the Committee on Problems of the Aged.

6. *State Board of Medical Examiners:*

Doctor Justin J. Stein, a member of the State Board of Medical Examiners, gave a statistical report on the licensing of physicians in California, pointing out that many more physicians were licensed each year by reciprocity with other states than through graduation in California schools. He also pointed to the difficulty of attempting to evaluate the educational level of medical schools in foreign countries and expressed the reliance of the board in the present system of requiring foreign medical school graduates to pass a preliminary examination, serve two years of internship and then pass an oral examination prior to being licensed. On motion duly made and seconded, it was voted to approve the maintenance of existing standards of licensure, approval of residencies and related matters.

7. *Committee on Fees:*

(a) Doctor Francis J. Cox reported on the disability sections of the new Social Security Act amendments and pointed out that benefits will be paid, following medical certification, to persons 50 or more years of age found to be permanently and totally disabled.

(b) Doctor Cox also reported on two hearings which have been held by the Industrial Accident Commission on the Association's application for amendments to certain fees and certain instructions in the existing schedule of fees recognized by the Commission. A committee appointed by the Industrial Accident Commission will meet in December for further consideration of the petition and the opposition expressed by representatives of industrial or employer organizations.

8. *Committee on Mental Health:*

(a) Doctor Alfred A. Auerback, chairman of the Committee on Mental Health, reviewed the provisions of legislation proposed by his committee in conjunction with legal counsel and the Committee on Legislation for the provision of community mental health services. On motion duly made and

seconded, it was voted to approve this proposed legislation in principle.

(b) Doctor Auerback also reported on proposals by groups of psychologists to initiate legislation to provide for the registration of clinical psychologists by a new board of psychologists to be established by the State of California. On motion duly made and seconded, it was voted to reaffirm the earlier decisions of the Council in opposition to legislation creating a new board, failing to define scope of practice and failing to protect the patient with organic disease.

(c) Doctor Auerback also reported that he had corresponded with the State Alcoholic Rehabilitation Commission, to oppose two proposals before that body, one of which would eliminate a means test in the giving of rehabilitation therapy incident to hospitalization and the other to concentrate in one hospital the entire $60,000 available for establishing demonstration clinics in general hospitals for alcoholic rehabilitation courses, rather than utilize from four to eight such hospitals, which could serve as controls in such projects. On motion duly made and seconded, it was voted to express official disapproval of these two proposals.

9. *Commission on Professional Welfare:*

Doctor Joseph F. Sadusk, Jr., chairman of the Medical Review and Advisory Board, presented an outline of the board's complete program and answered various questions on specific portions of it. In regard to a publication which had been approved by the board, it was duly moved, seconded and voted that the board and the Committee on Public Relations cooperate with each other prior to issuance of additional publications where public relations problems might be involved.

It was also moved, seconded and voted that the chairmen of all commissions and committees be requested to confer with the Committee on Public Relations prior to issuance of any reports or other material which might include matters of a controversial nature.

10. *Committee on Other Professions:*

A statement intended to clarify existing ambiguity relative to the administration of intravenous medications by registered nurses was presented, representing the joint conclusions of representatives of the Association, the California State Nurses' Association and the California Hospital Association. On motion duly made and seconded, this statement was approved for publication.

11. *Public Relations:*

Mr. Clancy reported on current activities of the public relations department and reviewed a first aid chart which had been prepared for distribution in schools and in the homes of patients.

12. *Commission on Public Health and Public Agencies:*

(a) Doctor West, Chairman of the Commission on Public Health and Public Agencies, reported that the statewide conference of physicians and schools had been held in Fresno with great success.

(b) Doctor West also reported that state and local health authorities were planning a campaign to secure the vaccination of some 6,000,000 California residents up to age 40 with poliomyelitis vaccine. There is agreement between Doctor West's committee and the state authorities that this program should be carried on as far as possible in the offices of physicians. On motion duly made and seconded, it was voted to cooperate with public health authorities in this program.

13. *Commission on Medical Education:*

Doctor Edward C. Rosenow, Jr., chairman of the Commission on Medical Education and chairman of the Committee on Postgraduate Activities, reported that there was confusion in some areas, as to the Council's attitude on permitting technical exhibits at the two-day postgraduate institutes planned for various cities. He recalled the previous Council opinion that such exhibits were not desirable at these institutes but that if they were held, the proceeds should revert to the Association. On motion duly made and seconded, it was voted to reaffirm the previous policy in this respect.

14. *California Physicians' Service:*

Mr. K. L. Hamman, executive vice-president of California Physicians' Service, reported that Doctor T. Eric Reynolds had been appointed a Commissioner of the Blue Shield System, to fill the unexpired term of the late Doctor Francis T. Hodges. Mr. Hamman also reported that a review of the physician resignations from C.P.S. in the past five years showed that 47 per cent of those who had resigned had later applied for readmission as physician members.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:40 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

Bontrager, Linnie Pearl. Died in Visalia, July 9, 1956, aged 32, of cancer. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1952. Licensed in California in 1952. Doctor Bontrager was a member of the Los Angeles County Medical Association.

✣

Briggs, Rowland Sill. Died August 5, 1955, aged 65. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1917. Licensed in California in 1929. Doctor Briggs was a member of the San Francisco Medical Society.

✣

Eppley, James Edward. Died in San Leandro, November 29, 1956, aged 46, in a fire in his home. Graduate of Marquette University School of Medicine, Milwaukee, Wisconsin, 1936. Licensed in California in 1946. Doctor Eppley was a member of the Alameda-Contra Costa Medical Association.

✣

Fitzgibbon, Clarence C. Died in Merced, November 14, 1956, aged 67, of heart disease. Graduate of the Oakland College of Medicine and Surgery, 1912. Licensed in California in 1912. Doctor Fitzgibbon was a member of the Merced County Medical Society.

✣

Ito, Paul K. Died October 15, 1956, aged 68. Graduate of College of Medical Evangelists, Loma Linda-Los Angeles, 1922. Licensed in California in 1922. Doctor Ito was a member of the Los Angeles County Medical Association.

✣

Johnson, Robert W. Died in San Fernando, November 8, 1956, aged 57, of cerebrovascular accident. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1925. Doctor Johnson was a member of the Los Angeles County Medical Association.

Kidder, Frank Woodman Kinsman. Died August 1, 1956, aged 69, of coronary heart disease and arteriosclerosis. Graduate of the College of Physicians and Surgeons, Los Angeles, 1909. Licensed in California in 1909. Doctor Kidder was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Meyer, Albert Julius. Died in Glendale, November 17, 1956, aged 73, of heart disease. Graduate of the University of Louisville School of Medicine, Kentucky, 1910. Licensed in California in 1931. Doctor Meyer was a member of the Los Angeles County Medical Association.

✣

Morrison, Lewis F. Died in San Francisco, November 10, 1956, aged 57, of heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1926. Licensed in California in 1926. Doctor Morrison was a member of the San Francisco Medical Society.

✣

Stealy, Clair L. Died in San Diego, November 14, 1956, aged 66, of rupture of the right wall of the aorta. Graduate of the University of Michigan Medical School, Ann Arbor, 1916. Licensed in California in 1919. Doctor Stealy was a member of the San Diego County Medical Society.

✣

Wartenberg, Robert. Died in San Francisco, November 16, 1956, aged 69, of heart disease. Graduate of the Universität Rostock Medizinische Fakultät, Rostock, Mecklenberg, Germany, 1920. Licensed in California in 1937. Doctor Wartenberg was a member of the San Francisco Medical Society.

IMPORTANT!

Scientific Motion Pictures

ATTENTION — ALL MEMBERS — CALIFORNIA MEDICAL ASSOCIATION

At the 1957 annual meeting of the California Medical Association, to be held at the Ambassador Hotel, Los Angeles, April 28 through May 1, approximately 100 motion pictures, on surgery and medicine, will be screened on the program of the Motion Picture Division.

The educational and scientific value of motion pictures has been proved by the large attendance at the Motion Picture Section during our previous meetings.

If you would like to present a scientific motion picture film on this program, you must submit your application to the Committee for approval not later than February 1, 1957.

Address all communications to: Arthur E. Smith, M.D., D.D.S., Chairman, Motion Picture Division, 1930 Wilshire Boulevard, Suite 511, Los Angeles 57, California.

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association**, April 28-May 1, 1957, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1957

Eighty-sixth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 28—MAY 1, 1957

HOTEL ROOM RATES*

	Single	Double	Twin Beds	Suites
AMBASSADOR HOTEL				
3400 Wilshire Boulevord				
Moin Building	9.00-17.00		12.00-20.00	28.00-36.00
Gorden Studios	15.00-21.00		22.00-26.00	38.00-48.00
CHAPMAN PARK HOTEL				
3405 Wilshire Boulevord			12.00	20.00-25.00
THE GAYLORD HOTEL				
3355 Wilshire Boulevord	7.00-9.00	10.50	11.50-12.50	18.00
HOTEL CHANCELLOR				
3191 West Seventh Street	6.00-8.00	9.00-10.00	10.00-12.00	17.00-22.00
SHERATON-TOWN HOUSE				
2961 Wilshire Boulevord	11.00-16.00		16.00-23.00	31.00

*The above quated rates are existing rates but are subject ta any change which may be made in the future.

CALIFORNIA MEDICAL ASSOCIATION
450 Sutter Street—Room 2000
Son Froncisco 8, Colifornio

Pleose reserve the following occommodotions for the 86th Annuol Session of the Colifornio Medicol Associotion, in Los Angeles April 28 - Moy 1, 1957.

Single Room $..... Double Bedded Room $..... Twin Bedded Room $.....

Smoll Suite $..... Lorge Suite $..... Other Type of Room $.....

First Choice Hotel..... Second Choice Hotel.....

ARRIVING AT HOTEL (dote).....Hour:.....A.M.....P.M. } Hotel reservations will be held until

Leoving (dote) .....Hour:.....A.M.....P.M. } 6:00 P.M., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, pleose include the nomes of both persons for eoch double room or twin bedded room requested. Nomes and oddresses of oll persons for whom you ore requesting reservotions ond who will occupy the rooms osked for:

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Individuol Requesting Reservotions—Pleose print or type Delegote?..... Alternote?.....

Nome..... County.....

Address..... City ond Stote.....

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

AMERICAN medical research has in the past few years made strides undreamed of a few years ago. Back of this progress stand the medical schools of the nation. The medical schools are the foundation of America's health. Yet, in this fundamental field of medical education there is cause for the deepest concern because of the critical lag between the increasing financial needs of our 81 medical schools and the income available to them.

The major portion of school funds comes from state appropriations (for state schools only), tuition, alumni contributions, grants and the American Medical Education Foundation. Income from tuition constituted but a small part—19.2 per cent—of the 1955 basic operating budget. The cost of training a physician totals approximately $10,000 to $12,000, yet the student's total four-year tuition averages only $2,906.

Medical education is costly because of requirements for extensive laboratory facilities, the high ratio of teachers to students and the complicated techniques growing out of ever advancing American medicine.

It is to the urgent need of the medical schools for increased support that the American Medical Education Foundation is expressly devoted. The American Medical Education Foundation was founded in 1951 under the sponsorship of the American Medical Association for the purpose of raising funds for our medical schools from individual physicians and from medical groups. It was obvious at that time that leadership of any program to support the medical schools must come first from the medical profession itself. The physicians of the country, themselves graduates of these medical institutions, would be the first to recognize that the education of future doctors depended on the maintenance of high standards in medical education. And doctors know, too, what it costs for adequate training. They realize the reasons behind the increasing costs in the field of medical education and they know that these costs must be met so that the quality of instruction will be maintained.

As members of the American Medical Association, doctors are convinced that the answer to the pressing problem of medical education must be found in voluntary support. Otherwise the way will be open for government subsidy and the ultimate control of medical education and of medical practice. So AMEF is the profession's organization and as members of the Woman's Auxiliary we are proud to share with you this responsibility for American medicine.

Your auxiliary realizes, too, that its responsibility is two-fold. Not only must we lend our financial support to the Foundation but we must do our share in the task of awakening the American public to the importance of the medical schools in the life of the nation—to the fact that back of the strides in American medicine are the laboratories and the classrooms of the medical schools and that only through voluntary support can these schools continue to provide for the future health of America.

In order to do this task well we have studied the findings of the American Medical Education Foundation in regard to the needs of the medical schools so that our membership will be an informed one. We know the history of the Foundation. We know that during the past six years the Foundation has received and distributed to the schools the sum of $4,684,312. In 1955 more than 25,000 contributors made individual donations to AMEF.

Every dollar contributed to the Foundation goes to the medical schools because the American Medical Association assumes the cost of administration. This makes AMEF one of the few organizations now raising money whose entire income in contributions goes to the cause for which the money is raised. Contributions may be earmarked for specific schools if the donor so desires.

Other policies in regard to contributions have been formulated by the Foundation. One very important one is that donations to the medical schools carry no restrictions as to their use. The deans of many schools have expressed their gratitude for this provision and have pointed out that because of it the grants received are worth many times their face value. The files of the Foundation are filled with letters from the deans of the medical schools telling of the important equipment purchased, the new classrooms provided and the satisfaction experienced through the ability to keep and increase teaching staffs with adequate salaries. The importance of this policy cannot be stressed too much.

Last year California auxiliaries contributed $7,143.06 to the American Medical Education Foundation. We are proud of our share in the total of $106,222.26 which the Woman's Auxiliary gave to the A.M.A.

We feel it is indeed a privilege to work with you, our doctor husbands, for the medical schools from which you graduated, and, in so doing, for the future of American medicine.

MRS. JOHN L. GALLAGHER
California State Chairman
American Medical Education Foundation

POSTGRADUATE INSTITUTE

RIVERSIDE, SAN BERNARDINO AND ORANGE COUNTY MEDICAL SOCIETIES

Presented by *Postgraduate Activities Committee* of the California Medical Association, in cooperation with University of California at Los Angeles School of Medicine, Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education.

Disneyland Hotel, February 14 and 15, 1957

PROGRAM

Thursday Morning, February 14

PHARMACOLOGY

9:30-10:10 a.m.—*The Use of Androgens and Estrogens.* David H. Solomon, M.D., Assistant Professor of Medicine.

10:10-10:30 a.m.—*Narcotic Analgesics.* George W. Stevenson, M.D., Visiting Assistant Professor of Pharmacology.

11:00-11:40 a.m.—*Tranquilizers.* Sidney Cohen, M.D., Veterans Administration Center, Los Angeles.

11:40-12:30 p.m.—Discussion.

12:30- 1:30 p.m.—Lunch.
Physician Responsibility in Postgraduate Medical Education. Thomas H. Sternberg. M.D.

Thursday Afternoon, February 14

HAND SURGERY

1:30- 2:15 p.m.—*Surgical Anatomy of Forearm and Hand.* Franklin L. Ashley, M.D., Assistant Clinical Professor of Surgery.

2:15- 3:00 p.m.—*Functional Examination of the Hand and Purposeful Splinting.* James Wilson, M.D.

3:00- 3:45 p.m.—*Treatment of Primary Injuries.* Franklin L. Ashley, M.D.

3:45- 4:30 p.m.—*Tendon and Nerve Repair.* James Wilson, M.D.

4:30- 5:15—*Fractures of the Hand and Wrist.* Theodore A. Lynn, M.D., Associate Clinical Professor of Surgery (Orthopedics).

5:15- 5:45 p.m.—Question and Answer Period.

7:00 —Dinner.

Friday Morning, February 15

SPECIAL DISEASES AND DIET THERAPY

Wendell H. Griffith, Ph.D., Chairman, Professor and Chairman of the Department of Physiological Chemistry.

9:30-10:00 a.m.—*Basic Principles.* Wendell H. Griffith, Ph.D.

10:10-10:50 a.m.—*Dietary Restriction of Sodium and Fat.* Arthur U. Rivin, M.D., Clinical Instructor in Medicine.

11:00-11:40 a.m.—*Factors Affecting Inanition and Obesity.* Sherman M. Mellinkoff, M.D., Assistant Professor of Medicine.

11:40-12:30 p.m.—Panel Discussion. Wendell H. Griffith, Ph.D., and Staff.
Luncheon Speaker: Roger O. Egeberg, M.D.: "*Coccidioidomycosis.*" (Sponsored by Orange and Riverside County Tuberculosis and Health Associations.)

Friday Afternoon, February 15

EMERGENCY CARE OF INJURIES

2:00- 5:00 p.m.—Panel Discussion.

Panel Members: Robert W. Bailey, M.D., Assistant Professor in Surgery (Orthopedics); David B. Sheldon, M.D., Instructor in Surgery; W. Eugene Stern, M.D., Associate Professor in Surgery (Neurosurgery), Moderator.

Assessment of the acutely injured patient, transportation, bandaging and splinting, methods of examination to ascertain the degree of injury.

Priority of management, preparation of the patient for surgical treatment in hospital.

Special consideration of the head injured patient, emergency treatment which should be offered to the head injured patient, the management of the urgent surgical problems prior to the arrival of any specialist team.

The handling of the "walking wounded." The matter of treatment of fractures on an Outpatient basis and in general the method of wound management—both the cleanly incised and contaminated wound as well as the grossly dirty contaminated wound.

HOSTS: Riverside County Medical Society • **REGIONAL CHAIRMAN:** H. C. Barron, M.D., 4030 Eighth Street, Riverside • **FEE:** $15.00. For additional information, contact Postgraduate Activities office, California Medical Association, 417 South Hill Street, Los Angeles 13. Special room rate at Disneyland Hotel: $12.00 per day (each room will sleep up to 4 people). Make hotel reservations early directly with hotel.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

The Fifth Annual Graduate Assemhly devoted to the **Dynamics of Endocrine and Metabolic Disease** will take place February 11 to 13, 1957, at Highland-Alameda County Hospital, Oakland. It will be held under the auspices of the Committee for Postgraduate Medical Education of the Alameda-Contra Costa Medical Association and the Institute for Metabolic Research of the Highland-Alameda County Hospital. Enrollment will be limited to 100 hy subscription. Inquiries should be addressed to Dr. Laurance W. Kinsell, Highland-Alameda County Hospital.

AMADOR

Dr. R. Judson Dowell, formerly of Auburn was appointed health officer of Amador County at a meeting of the county board of supervisors in December. On January 1 he assumed the position formerly held by Dr. Herhert Hobson, who resigned.

HUMBOLDT

Dr. Herman Iverson, Eureka, has been named president of the Humboldt-Del Norte Medical Society for 1957.

Dr. George Watson was elected vice-president; Dr. Walter Yeider, secretary; Dr. Paul Moynihan, assistant secretary, and Dr. Phillip Rummell, treasurer.

Dr. Frank O'Neil and Dr. Fred Olson were reelected delegates to the California Medical Association.

KINGS

Dr. Harold J. Jacob of Corcoran was reelected president of the Kings County Medical Society at a recent meeting of the organization. Other officers eleeted are Dr. Allen Shackleford of Avenal and Dr. George D. Guernsey of Lemoore. Dr. N. F. Sorenson and Dr. W. F. Chamlee, both of Hanford, were elected delegates to the C.M.A.

* * *

Dr. P. K. Edmonds, formerly of Corcoran but more recently in practice at Cedar City, Utah, was appointed director of public health for Kings County, effective January 1. The post was made vacant by the resignation of Dr. Donald E. Upp last summer.

LOS ANGELES

Dr. J. Norman O'Neill was installed as president of the Los Angeles County Medical Association January 1, succeeding Dr. Edward C. Rosenow, Jr., who was elected to the association's board of trustees for a seven-year term. Dr. Leon O. Desimone was elected vice-president, and Dr. William F. Quinn secretary-treasurer.

* * *

Dr. Lowell S. Goin was Carman Lecturer at the 42nd Annual Meeting of the Radiological Society of North America held December 2 to 7 in Chicago. The Carman Lecture, which is the main address of the Society's meeting, was established in memory of Dr. Russell D. Carman, pioneer radiologist.

* * *

The First Annual Postgraduate **Seminar on Psychiatry and Medicine,** which will be jointly sponsored by the Southern California Psychiatric Society, the Southern California District Branch of the American Psychiatric Association and the General Practice Section of the Los Angeles County Medical Association, will be held on Saturday and Sunday, January 19 and 20 at the auditorium of the Los Angeles County Medical Association.

The prime function of the seminar will be to inform general practitioners concerning the handling of psychiatric problems in practice. Registration will be without fee and open to members of the Los Angeles County Medical Association and the Southern California Psychiatric Society. Attendance at the meeting will be acceptable for credit by the American Academy of General Practice.

SAN FRANCISCO

At its meeting in December the San Francisco Medical Society installed **Dr. Donald M. Campbell** as president.

Others elected are Dr. Jane Schaefer, vice-president; Dr. Roberta Fenlon, secretary; Dr. George K. Herzog, Jr., treasurer, and Dr. Edgar Wayburn, editor of the society's bulletin. Dr. Robert C. Combs is president-elect.

New directors are Drs. Alexander F. Fraser, Agnes G. Plate, Rees B. Rees, Karl L. Schaupp, Jr., James H. Thompson, Malcolm S. M. Watts, and Eugene M. Webb.

* * *

Election of **Dr. Frank Gerbode** as an "Honorary Perpetual Student" of St. Bartholomew's Hospital Medical College, London, was announced recently by the dean of the institution. Dr. Gerbode, who served as an associate in surgery at St. Bartholomew's Hospital in 1949, is the sixteenth person to receive this highest honor conferred by the medical college. Another San Franciscan, Dr. Emile Holman, is also a Perpetual Student of St. Bartholomew's.

SANTA CRUZ

Dr. James Spencer of Watsonville was installed as president of the Santa Cruz County Medical Society and Dr. R. C. Alsberge of Santa Cruz was elected vice-president at the annual meeting held in December.

Dr. Samuel B. Randall of Santa Cruz, who has retired from active practice, was reelected secretary-treasurer, a post he has held for 29 years.

STANISLAUS

At the annual meeting of the Stanislaus County Medical Society on December 11, **Dr. Fred deLappe,** a graduate of Cooper College, class of 1897, an actively practicing general practitioner in Modesto from 1898 to 1953, and now retired, was called upon to participate in passing the gavel from outgoing president Dr. E. E. Chouret to the incoming president, his grandson, **Dr. Guerne W. deLappe.**

Dr. Robert W. Purvis was elected for the third consecutive year as secretary of the society.

GENERAL

The **Western Society for Clinical Researeh** will hold its Tenth Annual Meeting January 31 and February 1 and 2 at Carmel.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Disorders of Fluid and Electrolyte Metabolism, Etiology and Management. Tuesdays, February 5 through March 26, 1957. Sixteen hours. Fee: $40.00.

Fractures, Tuesdays, February 19 through March 26, 1957. Twelve hours. Fee: $30.00.

Sterility. Guest speakers: I. C. Rubin, M.D., New York, and M. B. Davis, M.D., Chicago. March 8 and 9. Nine hours lectures, six hours clinic.

The Pharmacological Basis of Therapeutics. Wednesdays, March 13 through May 8. Eighteen hours. Fee: $50.00.

Preventive Psychiatry in Pediatric Practice. Thursdays, March 21 through June 6. Twenty-four hours. Fee: $50.00.

Minor Surgery. Saturday, April 6.*

Dissection of Extremities. Mondays, April 29 through June 10.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Iron in Clinical Medicine (International Symposium). January 28 and 29, 1957. Sixteen hours.*

Internal Medicine in the Practice of Dentistry. Tuesday evenings, February 12 through March 12. Eight hours. Fee: $20.00.

Seminars in Medical Technology. Tuesday evenings, February 19 through April 2. Fee: $15.00.

Practical Management of Poliomyelitis. February 21-23.*

Symposium on Cerebral Palsy. Seven hours. March 2.*

Course for General Practitioners. Monday through Friday, March 4 to 8, Mount Zion Hospital. Thirty hours.*

Current Cardiac Concepts and Practice. Mornings, March 11-15. Fifteen hours.*

Electrocardiography in Daily Practice. Afternoons, March 11-15. Twenty hours.*

Symposium on Newborn. Children's Hospital, March 23.*

Advances in Diagnosis and Treatment of Metabolic and Endocrine Diseases. March 28-30.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

*Hours and fees to be announced.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

Postgraduate Conference in Ophthalmology. March 18 to 22.

Contact: Office of the Dean, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15. WEst 1-8000, Extension 207.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: $65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy: Demonstration and Lectures, Thorax, Abdomen and Pelvis. Wednesdays, January 16 through April 17, 1957. Twenty-six hours.

Management of Infertility. Thursdays, January 17 through March 7, 1957. Twelve hours.

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 6767 Sunset Blvd., Hollywood 28, Calif.

Sacramento Valley Circuit Courses for Dunsmuir, Chico, Marysville and Auburn, in cooperation with Stanford University School of Medicine. Spring series begins week of March 4.

North Coast Circuit Courses for Eureka, Ukiah and Napa, in cooperation with University of California, San Francisco. Spring series begins week of March 4.

West Coast Circuit in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

Southern Counties (Riverside, Orange and San Bernardino) in cooperation with University of California, Los Angeles, February 14 to 15, 1957, Disneyland Hotel, Anaheim. Chairman: H. C. Barron, M.D., 4030 Eighth Street, Riverside.

West Coast Counties in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel. Chairman: Edwin W. Tucker, M.D., 1073 Cass Street, Monterey.

San Joaquin Counties in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

North Coast Counties in cooperation with Stanford University, April 11 to 12, 1957, Santa Rosa, place to be announced. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

Sacramento Valley Counties in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

Medical Dates Bulletin

JANUARY MEETINGS

Southern California Chapter, American College of Surgeons, Biltmore Hotel, Santa Barbara, January 18, 19, and 20. *Contact:* Max R. Gaspar, M.D., Secretary-Treasurer, 211 Cherry Avenue, Long Beach 2.

Los Angeles County Heart Association Mid-Winter Heart Symposium. Los Angeles County Medical Association Bldg., Wednesday 2 to 5 p.m., January 23. *Contact:* Roxanna Jackson, Program Assistant, Los Angeles County Heart Association, 660 South Western Ave., Los Angeles 5, or telephone DUnkirk 5-4231.

California Rural Health Council Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

Fresno County Heart Association Fifth Annual San Joaquin Valley Symposium on Heart Disease. Hacienda Motel, 9 a.m. to 5 p.m., January 30. *Contact:* Edwin Graveline, M.D., Chairman, Scientific Committee, Fresno County Heart Association, 329 North Van Ness, Fresno 1.

American Federation for Clinical Research, Wednesday afternoon and Thursday morning, January 30 to 31, Golden Bough Theater and La Playa Hotel, Carmel.†

Western Association of Physicians, Wednesday morning and Friday afternoon, January 30 and February 1, Golden Bough Theater, La Playa Hotel, Carmel.†

Western Society for Clinical Research, Wednesday afternoon, Thursday and Friday mornings, Golden Bough Theater and La Playa Hotel, Carmel.†

Section on Diseases of the Chest, Los Angeles County Medical Association and Los Angeles County Tuberculosis and Health Association Sixth Biennial Postgraduate Course on Diseases of the Chest. All day each day January 31 to February 2 at Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles. *Contact:* David Salkin, M.D., Veterans' Hospital, San Fernando.

FEBRUARY MEETINGS

Congress on Industrial Health, A.M.A. Council on Industrial Health. Biltmore Hotel, Los Angeles, February 3 to 6. *Contact:* American Medical Association, 535 North Dearborn St., Chicago 10.

Cancer Commission, California Medical Association, Cancer Conference for Yolo County Medical Society, February 6.§

Committee on Postgraduate Medical Education of the Alameda-Contra Costa Medical Association and the Institute for Metabolic Research Fifth Annual Graduate Assembly on Dynamics of Endocrine and Metabolic Disease. February 11 to 13, Highland-Alameda County Hospital. *Contact:* L. W. Kinsell, M.D., Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

Cancer Commission, California Medical Association, Cancer Conference for San Diego County Medical Society, February 12.§

American Academy of Allergists, Princess Kaiulani Hotel in morning, and Mabel Smythe Auditorium in evening February 15. *Contact:* Mr. R. M. Kennedy, Executive Secretary, Honolulu County Medical Society, 510 South Beretania Street, Honolulu 13.

California Medical Association Postgraduate Institute, Disneyland Hotel, Anaheim, February 14 and 15. See also Postgraduate Notices.

Orange County Heart Association Annual Medical Symposium, Disneyland Hotel, February 16. *Contact:* Howard Buswell, executive director, Orange County Heart Association, 1704 North Olive or P. O. Box 1704, Santa Ana.

Ninth Annual Mid-Winter Radiological Conference sponsored by Los Angeles Radiological Society. Biltmore Hotel, Los Angeles, February 22 and 23. *Contact:* Louis J. Bonann, M.D., 1245 Glendon Avenue, Los Angeles 24 for dinner reservations; or Nathan M. Spishakoff, M.D., 405 North Bedford Drive, Beverly Hills.

American College of Chest Physicians Postgraduate Course on Diseases of the Chest. February 25 through March 1, 9 a.m.-5 p.m., Mark Hopkins Hotel, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11.

† *For information contact:* Joseph Ross, M.D., associate dean, UCLA Medical Center, Los Angeles 24.

MARCH MEETINGS

Medical Advisory Board, United Cerebral Palsy Association all day Symposium on Cerebral Palsy, San Francisco, March 2. Guest speaker: Dr. Samuel P. Hicks, Pathologist, Harvard Medical School. *Contact:* Mrs. Marjorie E. Brush, executive director, 47 Kearny St., San Francisco 8 or phone EXbrook 2-1862.

Society of Graduate Surgeons of Los Angeles County Hospital Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

College of Medical Evangelists School of Medicine Annual Alumni Postgraduate Convention. Refresher courses, White Memorial Hospital, March 10 and 11; Scientific Assembly, Biltmore Hotel, March 12 to 14, both in Los Angeles. *Contact:* Walter B. Crawford, managing director, Alumni Postgraduate Convention, 316 N. Bailey St., Los Angeles 33, or telephone: ANgelus 2-2173.

Cancer Commission, California Medical Association, Cancer Conference for Tulare County Medical Society, March 28.§

California Tuberculosis and Health Association and the California Trudeau Society Joint Annual Meeting, Hotel Statler, Los Angeles, March 28 to 30, 9 a.m to 5 p.m. *Contact:* E. L. Daggett, Director, Public Information, 130 Hayes St., San Francisco 2, or telephone HEmlock 1-8771.

Cancer Commission, California Medical Association, Cancer Conference for Los Angeles County Medical Association, March 31.§

APRIL MEETINGS

Regional Meeting International College of Surgeons, Las Vegas, Nevada, April 8 and 9. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

Letterman Army Hospital "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.‡

Cancer Commission, California Medical Association, Cancer Conference for Marin County Medical Society, April 4.§

Cancer Commission, California Medical Association, Cancer Conference for Ventura County Medical Society, April 9.§

California Society of Anesthesiologists, Inc., Annual Meeting, Sun Valley, Idaho, April 9th. *Contact:* Francis E. Guinney, M.D., secretary, 2790 Monte Mar Terrace, Los Angeles 64.

United States-Mexico Border Public Health Association Fifteenth Annual Meeting, April 9 to 12, San Antonio, Texas. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

Valley Children's Hospital Spring Clinics, Roosevelt High Auditorium, Fresno, April 12-13. *Contact:* Valley Children's Hospital, Millbrook and Shields Avenue, Fresno.

Cancer Commission, California Medical Association, Cancer Conference for Kern County Medical Society, April 16.§

‡ *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

§ *Contact:* Walter E. Batchelder, M.D., Medical Director, Cancer Commission, 467 O'Farrell St., San Francisco.

San Francisco Heart Association Nurses Institute on the Care of the Cardiac Patient, April 17 and 18, 8:30 a.m. to 5 p.m., San Francisco. *Contact:* Mr. Lawrence Kramer, Executive Director, San Francisco Heart Association, 604 Mission Street, San Francisco, or telephone: YUkon 2-5753.

Cancer Commission, California Medical Association, Cancer Conference for San Luis Obispo County Medical Society, April 20.§

Letterman Army Hospital "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

Cancer Commission, California Medical Association, Cancer Conference for Merced County Medical Society, April 25.§

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

SUMMER AND FALL MEETINGS, 1957

Cancer Commission, California Medical Association, Cancer Conference for Napa County Medical Society, May 8.§

California Heart Association Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

Western Branch, American Public Health Association annual meeting, Lafayette Hotel, Long Beach, May 29 and June 2. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

Children's Hospital of the East Bay Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

Idaho State Medical Association 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

Wyoming State Medical Society Rocky Mountain Medical Conference Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

Colorado Division, Cancer Society Rocky Mountain Cancer Conference, 9 a.m., July 10 and 11, Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., Chairman, 835 Republic Bldg., Denver 2.

Washington State Medical Association Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

San Francisco Heart Association 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

California Society of Internal Medicine Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

THE PHYSICIAN'S *Bookshelf*

PULMONARY EMPHYSEMA—Edited by Alvan L. Barach, M.D., Assistant Clinical Professor of Medicine, and Hylan A. Bickerman, M.D., Assistant Clinical Professor of Medicine, both of Columbia University College of Physicians and Surgeons, The Williams and Wilkins Company, Baltimore, 1956. 545 pages, $10.00.

The diagnosis of pulmonary emphysema implies progressive disability with a discouraging clinical course of respiratory, circulatory, and general metabolic deterioration. There have been excellent studies of the pathology of this disease, and extensive investigation of the pathophysiology in recent years, but the pathogenesis remains ill-defined. There has been a great need for general review of this subject in order to correlate the knowledge in these different fields, to eliminate some of the confusion in terminology, and to arrive at more definite concepts of pathogenesis and effective methods of treatment.

Barach and Bickerman have edited "Pulmonary Emphysema" from the clinician's viewpoint with the commendable utilization of knowledge of pathological physiology as a basis for therapy. Discussion of the abnormalities in breathing mechanics, gas exchange, and pulmonary circulation are the foundations for the book, and are extremely well-presented by several investigators. Dayman's chapter on the mechanics of breathing should be read first since it so clearly presents the basic problems in pulmonary emphysema. The description of the abnormalities of air-flow due to expiratory bronchiolar obstruction which is secondary to intrinsic disease of the bronchioles and to loss of supportive lung structure, explains the clinical picture of abnormal lung function. The air-flow dynamics by which inefficient bullae are inflated in preference to more normal adjacent lung tissue is well-described. The effects of impaired gas-exchange in pulmonary emphysema with hypoxemia, carbon dioxide retention, and associated alterations in acid base balance, are clearly presented. The importance of the mechanism of adaptation to high levels of carbon dioxide in patients with hypercapnia is emphasized. The whole problem of carbon dioxide retention, with its effects on respiration and other functions is thoroughly discussed. One might conclude with the generality that the combination of increased carbon dioxide levels with acidosis is usually associated with symptoms, and as such, should be corrected by methods which improve alveolar ventilation.

The obvious steps from the consideration of the pathological physiology leading to a logical basis for therapy are presented by the authors in the first few chapters. There is much too much post hoc reasoning in support of some of the conclusions, and unfortunately there is a great deal of confusion in this part of the book. The usual methods of medical therapy are presented and analyzed from the experience of the authors. In these and other chapters, there are adequate discussions of the role of infection in this disease, the use of mechanical aids to improve ventilation and aid removal of secretions, and the use of drugs such as antibiotics, diamox, bronchodilators and detergents. The popular intermittent positive pressure breathing (IPPB) treatment is discussed in several chapters, and leaves one with the conclusion that IPPB has no great place in the routine management of this disease, but does have a place in aiding ventilation for carbon dioxide removal and in the patient with marked bronchial obstruction. Deterling's discussion of the role of surgery in emphysema is disappointingly inconclusive. This writer summarizes various thoughts about the role of surgery in this disease without much critical analysis. The general advisability of removing blebs and bullae, especially when there is evidence of compression of surrounding tissue, is restated. There is an excellent chapter on pulmonary function testing.

In summary, this book presents some excellent discussions of the pathological physiology of pulmonary emphysema and good summaries of present therapeutic methods. One might hope to read a more thorough discussion of the pathogenesis of this disease and of some of the recent studies on the pathology. The book is recommended for all physicians who are dealing with this problem, whether in general practice or specializing in chest diseases. The chapters on the pathological physiology are very clearly written and well-illustrated. The emphasis of the book is on therapy, and there are many helpful points for the practitioner. It is obvious that many questions about this disease remain unanswered, and the need for continued investigations is apparent.

* * *

CYTOLOGY OF THE BLOOD AND BLOOD-FORMING ORGANS—Marcel Bessis, Director of Research Laboratory, Centre National de Transfusion Sanguine, Paris, France, translated by Eric Ponder. Grune and Stratton, New York, 1956. 629 pages, $22.00.

This book was translated from the original by Dr. Ponder, the Nassau Hospital, Mineola, New York. The original title was Traite de Cytologie Sanguine, by Marcel Bessis, director of Research Laboratory, Centre National de Transfusion Sanguine, Paris, France.

The attempt to enlarge upon the earlier concepts of stained films in cytology of classical hematology is accomplished with great facility and clarity. There are sections devoted to techniques of phase-contrast studies, cytochemical methods, and electron microscopy, as well as to examination of the blood cells under the various techniques of polarized light, ultraviolet light and fluorescence microscope.

The illustrations are extremely well produced. Interspersed throughout are drawings, sketches and diagrams, adding to the value of the written details. The photographic reproductions of fields as seen under the electron microscope and under phase-contrast under great magnifications show quite striking degrees of resolution and clear focus.

This book is a valuable addition to hematologists in general, as well as to students of cytology. The newer techniques described will undoubtedly add much useful information in the future. The book is, however, somewhat expensive.

CANCER OF THE LUNG: An Evaluation of the Problem—Proceedings of the Scientific Session, Annual Meeting, November 3-4, 1953. American Cancer Society, Inc., 527 West 57th Street, New York 19, N. Y., 1956. 322 pages. No charge known.

This interesting monograph considers several aspects of the problem of primary bronchial cancer. There are up-to-date sections on incidence, etiology, methods of detection and methods of treatment.

In discussing the place of tobacco in the etiology of lung cancer, one of the participants refers to statistical study performed in Chicago in 1949 which showed that in a male population of 100,000 in that city, there were 78 cases of cancer of the lung that year, while in the same period of time in the suburbs of Chicago there were only about 17 cases in a similar population; the discussant opined that this suggested the probability that cigarette smoking was of secondary importance compared to air pollution.

Dr. Andervont, in a section on the experimental production of lung tumors, suggests that his readers can relax because the experimental animal has a difficult time in answering questionnaires, never spontaneously smokes cigarettes and studiously avoids the payment of taxes. Dr. H. S. N. Greene discusses his experience with transplants of human lung cancer. In his material, every single one was heterologously transplantable, in contrast to a transplantability rate of only about 50 per cent of epidermoid carcinoma in parts of the body other than the lung. He states that the experimental lung cancer produced by methyl cholanthrene in animals does not have the same identity as the human disease; indeed, he has failed to produce cancer with asbestos, beryllium or tobacco.

Eisenberg of the A.E.C. points out that in this country there have been no cases of lung cancer reported in the relatively large group of workers who handled radium, thorium, and uranium prior to the onset of the atomic energy industry, despite the fact that prior to 1940 about 300,000 pounds of uranium were extracted per year from ores mined on the Colorado plateau.

Counteracting some of these opinions, Wynder, Hammond and others believe that there is a cause and effect relationship of human cancer with cigarette smoking and with certain toxic occupational hazards.

Dr. L. W. Guiss brings the report on the mass survey for the detection of pulmonary disease in Los Angeles up to date. This may be summarized as follows:

Approximately 2,000,000 persons were given minifilms.
64,000 disease suspects were encountered, of which
3,500 were tumor suspects. Of these
340 had tumors confirmed, of which
222 were bronchial carcinomas.
111 of these were subjected to operation.
31 were alive up to 2½ years.

The author points out that if the survey had been confined to persons over the age of 45, and had been repeated every six months for an indefinite period, the yield would, of course, have been greater.

In discussing the problem of early detection of lung cancer, Rigler points out that "the high hopes for the early detection of cancer of the lung through the medium of x-ray surveys have met with considerable disappointment." He illustrates some cases of rather slow growing bronchial carcinoma and discusses the desirability of retaining chest films on adults for several years. Sosman mentions the difficulty of persuading adults to have regular chest roentgenograms, and observes "furthermore, the reading of the routine survey films is usually left to the younger men on the radiological staff because it is a dull, deadly and monotonous job and by its very nature breeds errors arising from inattention . . . my best suggestion on this point is to turn such work over to a well trained woman physician, for the women stand up under deadly routine much better than men." It strikes this reviewer as curious that the actual interpretation of mass surveys is so often eschewed by the persons who recommend them the most.

The modest results obtainable by modern surgery and modern radiotherapy are well summarized in a series of chapters towards the end of the monograph. There are 16 pages with illustrations on each side, most of them very well reproduced. There is no index. Even though this copy of the proceedings reaches publication three years after the actual event, the reviewer regards it as a worthwhile contribution to the literature on the important subject of primary bronchial cancer.

* * *

CLINICAL HEMATOLOGY—Fourth Edition—Maxwell M. Wintrobe, M.D., Ph.D., Professor and Head, Department of Medicine and Director Laboratory for the Study of Hereditary and Metabolic Disorders, University of Utah, College of Medicine, Salt Lake City. Lea & Febiger, Philadelphia, 1956. Thoroughly Revised, 236 Illustrations and 20 Plates, 18 in Color. 1,184 pages, $15.00.

Doctor Wintrobe has again taken upon himself the monumental task of reviewing the recent hematologic literature and presenting a new edition of his textbook, which is one of the medical classics. As before, it is comprehensive yet very readable, and the format is essentially the same. New and rewritten sections are those on hemoglobin abnormalities, hemoglobinopathies, hemolytic anemias, blood coagulation and hemorrhagic disorders, and the production and destruction of erythrocytes. The bibliography is extensive with references into 1956. The best of all hematologic texts, this book should be available to all whose work brings them in contact with the blood. This includes medical students, general physicians, internists, hematologists, pathologists, laboratory workers and even surgeons.

* * *

THE RELIEF OF SYMPTOMS—Walter Modell, M.D., F.A.C.P., Associate Professor, Clinical Pharmacology, Cornell University Medical School. W. B. Saunders Company, Philadelphia, 1955. 450 pages, $8.00.

This book is offered as a practical guide to the problems of providing the patient with relief from his distress as opposed to curing his disease. The author believes that relieving distressing symptoms comprises an exceedingly important part of medical care, and to ignore the reactions of the patient to distress is to deprive him of a significant part of what modern medicine has to offer. The book is an outgrowth of a series of lectures to medical students and will probably be of more use to students than practitioners.

The counsel offered by Dr. Modell typifies what every physician tries to accomplish, whether or not in the exact form suggested by the author. As he himself says, there is no original advice in the book. However, his approach is that of the average experienced and thoughtful doctor.

The book is divided into three parts. First, there are five introductory chapters on general considerations: The meaning of symptoms, their analysis, their importance, the methods of providing relief, and the analysis of response to treatment. These form a basis for the approach to treatment of symptoms in general. The second part comprises 24 chapters, on specific groups of symptoms. The third part is a discussion of cortisone and the masking of symptoms. Everything is nicely pigeon-holed, outlined and summarized. Old wives' tales and pharmacologists' wisdom are discussed and dealt with. With all of this, there is a limited amount of specific advice on individual subjects.

THE PREMARITAL CONSULTATION—A Manual for Physicians—Abraham Stone, M.D., Associate Clinical Professor of Preventive Medicine, New York University College of Medicine, Director, Margaret Sanger Research Bureau; and Lena Levine, M.D., Associate Medical Director, Margaret Sanger Research Bureau. Grune and Stratton, New York, 1956. 90 pages, $3.00.

Young people seek in marriage the satisfaction of three basic human needs: Love and affection; legal and social sanction of satisfaction of their normal sexual needs; the establishment of a home and family.

The Premarital Consultation is written for the general practitioner who has an interest in this field. It is a small book of some 90 pages written in the form of a sample history, examination and interview to meet the needs of the average healthy couple who come for a general premarital consultation. A couple may be merely seeking factual information that will facilitate adjustment or they may be concerned by some specific aspect of marriage. The histories of the couple should be taken separately to provide the opportunity for greater freedom and for discussion of any problem which he or she would not prefer to raise in the presence of the other.

There are appendices listing contraceptive techniques, marriage laws and national organizations concerned with family relations.

This is an excellent small book which can be recommended to any physician who is interested in the subject of premarital consultation.

* * *

THE DRUG ADDICT AS A PATIENT—Marie Nyswander, M.D., Senior Supervising Psychiatrist, Post Graduate Center for Psychotherapy; Consultant, New York City Department of Health; President, National Advisory Council on Narcotics. Grune & Stratton, Inc., New York, 1956. 179 pages, $4.50.

That the whole subject of drug addiction and its management is controversial is attested to by the pleomorphic and often fatuous reports that one reads in the lay press; almost everyone except experienced physicians have had a hand in outlining the means by which an extremely complicated and tragic disease should be controlled.

Dr. Nyswander's book is therefore timely and should be welcomed by the whole profession of medicine. The author is well qualified to speak upon the subject, having spent several years in the United States Public Health Service a part of which was served in the governmentally established Lexington, Kentucky, Hospital given exclusively to the care and treatment of committed narcotic addicts. She is obviously a thorough going physician, having been certified by the American Board of Psychiatry and Neurology, and since her training, having been appointed supervisor and director of a well established postgraduate psychotherapy clinic in New York City.

The book deals with the history and background and drug addiction as it has developed in this country, the laws that have been passed in an attempt to control the traffic, and with a philosophy so simple and clear that one is immediately impressed with its experienced authority.

There follows well organized chapters on Pharmacology of the principal addicting drugs, Physiology of drug addiction, Psychology, dealing with the addicts personality, theoretical formulations, etc., Social Pathology, Clinical diagnosis, Withdrawal treatment, Rehabilitation, and an excellent comparative chapter on the British approach. Her last section deals with a six point program that was recently proposed by the New York Academy of Medicine.

In the main Dr. Nyswander points out that drug addiction is a distinct "disease entity" that should be treated as disease and not as crime. She then discusses the means by which this may be done. Her experience has impressed her with the futility of the complete prohibitive and punitive approach that has been our tragic experience during the past forty-odd years. Her views are more appreciated for their honesty and originality since there was ample time during her training experience within a governmental bureau for her to be regimented into that bureaucratic type of thinking and rationalization that marks so many people who must conform to stylized patterns of performance. The author's courage is understandable when one reads her full account of the "whole truth" regarding the "clinic trials" of the 1920's and her criticism of the many reports published by the Bureau of Narcotics that distort the facts. At the same time no attempt is made to discredit those advances that have been made by governmental intervention in a problem that plagues every stratum of our society. One has the impression upon completing the book that here is a work that has been ably and honestly performed in the interest of the people and that the medical profession should assume its responsibility in the medical aspects of a medical problem. The book should be a reading "must" on every American physician's list.

* * *

PATHOLOGIC PHYSIOLOGY—Mechanisms of Disease—Second Edition—Edited by William A. Sodeman, M.D., F.A.C.P., Professor of Medicine, School of Medicine, University of Missouri. W. B. Saunders Company, Philadelphia, 1956. 963 pages, 173 illustrations, $13.00.

Pathological physiology includes the many phases of pathogenesis of disease. It covers the mechanisms whereby etiologic agents effect their damage.

The subject matter of this text is considered under conventional headings—Genetics, Growth and Neoplasia; Metabolism and the Endocrine Glands; Infection and Allergy; Physical, Toxic and Chemical Agents; Circulatory System; Respiratory System; Digestive System, Urinary Tract; Blood and Spleen; Locomotor System; Nervous System. However, the discussions center around the mechanisms whereby agents producing disease bring about the changes rather than about the agents themselves.

The second edition has included the addition of some 155 pages as well as changes in the general sequence. New chapters have been added on the nervous system by Dr. Russell N. DeJong and on Genetics, Growth and Neoplasia by Dr. Madge T. Macklin. The latter is noteworthy in the way it points out differences between clinical medicine and other types of biology in the consideration of cancer. Biologists working with cancer in mice feel that it is no longer necessary to submit proof that cancers are inherited, but that it merely remains to find out how they are inherited. On the other hand, doctors still require evidence that cancer in man has a genetic basis. Dr. Macklin feels that this is a misconception of the meaning of heredity. Cancer, she points out, is in no sense different from any trait which we ordinarily call hereditary. When we say a disease or normal condition is inherited, we understand that this is a short cut to saying that genes conditioning the development of the trait are the inherited substance and whether or not the trait ultimately comes to expression is the result of intraaction between the gene complex and the surrounding milieu. She points out other factors in this regard: Cancers may be inherited even though the parents have not cancer; cancers depend upon multiple genes rather than a single gene; cancers probably represent multiple diseases rather than a single disease. What is inherited apparently is a complex of genes for cancer of specific organs, or site specificity.

The first edition of "Pathologic Physiology" was considered very favorably (California Medicine 74, 4, 289 (April) 1951). The second is similar recommended.

HANDBOOK OF PHYSICAL THERAPY—Robert Shestack, TH. G.R.P., P.T.R. Technical Director, Department of Physical Therapy, Washington County Hospital, Hagerston, Maryland; Director, Department of Physical Therapy, and Consulting Physical Therapist, Kings Daughters Hospital, Martinsburg, West Virginia. Springer Publishing Company, Inc., New York 10, N. Y. 1956. 199 pages, $4.25.

The author, a physical therapist, has written this book so that the doctor will know how to order physical therapy. In telling the doctor how to order physical therapy, he lists the various types of modalities which are available. The doctor is expected to diagnose the condition of his patient and to choose from the list of modalities those which he wishes the physical therapist to apply. How these are to be applied is left to the discretion of the physical therapist.

He goes on to discuss the various modalities available for the application of heat, such as radiant heat and infrared radiation, diathermy, microwave diathermy, ultrasound, ultraviolet irradiation, galvanic current, low frequency currents, electrodiagnosis, faradic current, paraffin baths, hydrotherapy, massage and exercise. He discusses briefly the physiology of these agents and then relates the therapeutic indications and contraindications for them. He has chosen good textbooks from which to gain this material, but it has been briefed to such a point as to give no clear conception of the agent and its particular place. With the rapid progress being made in physical medicine, many of the applications are no longer in use, while many newer methods are not mentioned. The author has attempted a large undertaking.

"Since the examining physician must make the diagnosis before the therapist can administer treatment, we have limited ourselves merely to a discussion of treatment." (Page 96) "Because of the many therapeutic methods available to the doctor, he is sometimes at a loss to determine which to prescribe; in general, he may employ the following plan": And so a physical therapist describes to the doctor of medicine how a patient with arthritis and rheumatic conditions, degenerative joint disease, peripheral nerve conditions, neurological conditions, peripheral vascular conditions, acute joint injuries, allied conditions and orthopedic disorders, fractures, hand injuries, poliomyelitis, genitourinary conditions, dermatological conditions, burns, eye, ear, nose and throat conditions should be treated. It would seem to the reviewer a reflection on the medical schools and the medical profession that a therapist should consider it necessary to write a book for the purpose of telling physicians how to treat their patients.

The books listed in the bibliography should be of real value to the physician who wishes to prescribe physical therapy for his patients.

* * *

A HISTORY OF THE THERAPY OF TUBERCULOSIS and THE CASE OF FREDERIC CHOPIN—Esmond R. Long, M.D., Director of Medical Research, National Tuberculosis Association. University of Kansas Press, Lawrence, Kansas, 1956. 71 pages, $2.00.

In his Logan Clendening lecture Dr. Long gives a good readable summary of the treatment of tuberculosis from ancient to modern times. Much material is compressed into a brief space and no important phase of the subject is left untouched. As to the other lecture—The Illness and Medical Care of Frederic Chopin—the reviewer can make no critical judgment. It is however an interesting tale. Apparently Chopin fell into the same difficulty that Laennec, John Keats and the Brontes all succumbed to: Rest only when they could not get on their feet, then as soon as they were better, off on restless activities again despite hemorrhages and other severe symptoms. The two essays bring out well the great distance we have come in therapy of tuberculosis.

ORAL CANCER AND TUMORS OF THE JAWS—George S. Sharp, M.D., F.A.C.S., F.A.C.R. (Ther.), Professor of Pathology, School of Dentistry, Assistant Clinical Professor of Surgery, School of Medicine; Weldon K. Bullock, M.D., M.Sc.(Path.), Associate Clinical Professor of Pathology, School of Medicine, and John W. Hazlet, D.D.S., Lecturer, Oral Tumor Pathology, School of Dentistry; all from the University of Southern California. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 561 pages, $15.00.

All lesions of the mouth and jaws are covered with a pleasing clarity of description and without confusing or unnecessary words. Especially impressive are the great number of photographs. Of course, they would be much better in color but the cost of a book of that type would be prohibitive except perhaps for the Government.

I found that viewing the photographs with an ordinary magnifying glass brings out the lesions with much more clarity and gives them a somewhat third dimensional character.

They will provide for the surgeon an excellent aid in arriving at differential diagnoses. I can highly recommend this book for those who are called on frequently to diagnosis and treat lesions of the mouth and jaws.

* * *

MEDITATIONS ON MEDICINE AND MEDICAL EDUCATION—Past and Present—I. Snapper, M.D. Grune and Stratton, New York, 1956. 138 pages, $3.75.

The title of this small and unusual book scarcely reflects the nature of its contents. The book consists of three essays which, in general, treat of the contributions made directly or indirectly by Dutch physicians to the growth and development of American medicine, and the whole is held together and given a degree of unity and consistency by a plea for the greater recognition of the art as opposed to the science of medicine.

The first of the three essays details the background, work and influence of pioneer Dutch physicians, surgeons and midwives who participated in the settlement of the colony of New Netherlands established at the mouths of the Hudson and Delaware rivers, and thus provides a picture of the earliest medicine of this country.

The second essay follows the origins and fate of clinical Hippocratic medicine to its restoration under the great teacher-physician Herman Boerhaave (1668-1738), and finally traces the influence of Boerhaavian principles and teachings through his pupils on the organization of the first American medical schools and on American medical practice.

The first two of these essays constitute a historical preliminary to the third, in which distinctions are drawn between bedside and experimental medicine. The author voices his concern for the future of medicine with the loss of, and underemphasis given to, Hippocratic clinical medicine in the curricula of our present-day medical schools. The author correctly points out that this loss was due to Flexner who, despite his great contribution to medical education in getting rid of the diploma mills, had little understanding of the meaning of Hippocratic medicine. The great weakness of the Flexner report in this regard needs wider recognition and the author has much of importance to say on the subject.

All those interested in medical education will find Dr. Snapper's book profitable reading and many a clinician will derive satisfaction from it. The subject is a most cogent one in this day when more and more pressure is being put on medical schools to install "absolute" full-time which inevitably will add further to the loss of Hippocratic principles.

If a word of criticism may be offered it is to the effect that in its historical portion there is an undue reliance upon secondary sources.

WILLIAMS OBSTETRICS—Eleventh Edition—Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University. Appleton-Century-Crofts, Inc., New York, 1956. 1212 pages, $14.00.

This new edition should secure for "Williams Obstetrics" a firm footing for all time as a "standard text," or the kind of book described by David Sinclair in his essay on "The Student Textbook" as one which is unanimously accepted by the most diverse medical schools. He goes on to say that "some of its success indeed may be due to a combination of luck and good publishing management, but if so many find it useful one cannot escape the conclusion that it must fulfill its purpose better than most of its fellows." Herein appears to lie the success "Williams" has enjoyed as an undergraduate text since its first edition appeared in the earliest days of this century.

Your reviewer's favorable comments on the previous (tenth) edition, the first under Eastman's editorship, appeared in this journal in January, 1951. There is little else one can say about the new edition beyond pointing out that it is a better book than its predecessor for at least two reasons. In the first place, a larger proportion of the text has been rephrased in Eastman's pleasing and lucid editorial style. Secondly, as one would suspect, there are many new or completely rewritten sections concerning problems which have been the focus of obstetric research in the past five or six years, such as fibrinogenopenia, the use of hypotensive drugs, uterine blood flow, adrenocortical hormones, and retrolental fibroplasia, just to mention a few. Included in the book for the first time is an excellent chapter on the psychiatric aspects of pregnancy, written by Leo Kanner.

A larger and more attractive type is used in this edition, and the illustrations are more numerous, yet the total length of the volume has not been appreciably changed. "Williams" will continue to rank as the number one choice of most teachers of obstetrics because it fulfills all the essential qualifications of a textbook. But to quote again Sinclair's delightful essay, "the student, if it is humanly possible, likes his reading to be interesting and stimulating," and it is this qualification which the new "Williams" possesses to a greater degree than any American obstetrical text currently available. Everyone who is practicing, studying, or teaching obstetrics should own this book and should read it frequently.

* * *

PSYCHOANALYSIS AND PSYCHOTHERAPY—Developments in Theory, Technique, and Training—Franz Alexander, M.D., Director, Chicago Institute for Psychoanalysis, Clinical Professor of Psychiatry, University of Illinois, W. W. Norton & Company, Inc., New York, 1956. 299 pages, $4.75.

This is another book on these subjects from this distinguished author. He reviews the developments in this field in terms of theory, technique and training. He brings up to date his thinking on psychoanalytic theory and the technique of psychoanalytic therapy. He discusses the classical and modified approaches.

A considerable portion of the book is concerned with psychotherapy, "dynamic psychotherapy" and "psychoanalytically oriented psychotherapy." There is also the presentation of opinions of contemporary teachers of psychiatry and psychoanalysis in various medical schools, clinics and psychoanalytic institutes regarding the teaching of psychiatry, psychoanalysis and psychotherapy.

The book has a great deal of excellent material. The extremes of attitudes and belief are covered but there seems to be an indication of a trend toward a middle ground of opinion and practice.

This book will primarily be of interest to psychoanalysts, psychiatrists and those concerned with psychoanalytic and psychiatric education.

ALCOHOLISM AS A MEDICAL PROBLEM—H. D. Kruse, M.D., Editor, A Conference held under the auspices of the Committee on Public Health of the New York Academy of Medicine and the New York State Mental Health Commission. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York, 1956. 102 pages, $3.00.

The book reports a conference sponsored by two New York state medical departments. Half of the eight papers discuss the causes of alcoholism; two describe its onset and course; and one each presents the epidemiology and an evaluation of treatment. The eight participants formulate briefly considerable factual knowledge about alcoholism and some interesting theoretical concepts, mainly as a basis for suggesting various promising areas of research.

Arguments as to whether alcoholism is a disease serve little purpose in the presentation of alcoholism as a medical problem. The discussion is weakest in one of the stated aims, a consideration of proper procedures for the evaluation of treatment. Alcoholism as an addiction is not explained, nor is the practical management of the alcoholic discussed. The contributions of Alcoholics Anonymous are ignored. The physical aspects of brain disease in a large number of chronic cases of alcoholism; the use of a physiologic restraint such as disulfiram in the treatment of compulsive drinking; the need for research in the prevention of delirium; and the important research of men like Courville are either slighted or omitted. One participant frankly admits the futility of overconcentration on the chronic drinker's personality disorder and the failure of psychoanalytic treatment. Too few of the eight participants have had practical experience in the treatment of alcoholism.

* * *

ROENTGEN SIGNS IN CLINICAL DIAGNOSIS—Isadore Meschan, M.A., M.D., Professor and Director of the Department of Radiology at Bowman Gray School of Medicine, Wake Forest College. With the assistance of R. M. F. Farrer-Meschan, M.B., B.S. W. B. Saunders Company, Philadelphia, 1956. 1,058 pages, 2,216 illustrations on 780 figures, $20.00.

Many years ago there appeared a small monograph entitled "Rontgendiagnostik der erkrankungen innerer organe in tabellenform" written by Dr. Emmerich Markovits of Vienna. This summarized in surprisingly brief and effective fashion the differential diagnosis of various diseases based on the objective findings at roentgenoscopy or roentgenography. The present work is a much larger and more ambitious effort along similar lines. The author summarizes the fundamentals of radiographic technique and the information to be obtained by radiography of different portions of the skeleton. Then, in a series of some 25 chapters, he deals with the diagnosis and differential diagnosis of various disease conditions based upon the objective evidence at hand plus the other clinical information furnished by the examining physician.

The nonspecific nature of the microscopic and macroscopic changes occurring in different types of disease is well known to experienced pathologists. Roentgenography consists essentially in the recording of living macroscopic pathology, and therefore many roentgenographic findings are by their nature nonspecific.

The book is written primarily for medical students and residents in radiology, and should be of considerable use to such workers. It is well printed and illustrated, and the number of references is sufficiently small not to detract from the fundamental text nor to cause the reader to indulge in undue serendipity. The material is based on the author's experience, especially at the University of Arkansas; he is now professor of radiology at Bowman Gray School of Medicine.

CRYPTOCOCCOSIS—Torulosis or European Blastomycosis—M. L. Littman, M.D., Ph.D., Department of Microbiology, The Mount Sinai Hospital; and Lorenz E. Zimmerman, M.D., Central Laboratory, V. A. Armed Forces Institute of Pathology, Washington, D. C. Grune & Stratton, New York, 1956. 205 pages, $8.50.

Cryptococcosis or torulosis is an exceedingly uncommon human disorder. The reviewer has encountered only three cases in nearly twenty years of special interest in infectious disease. The authors present evidence that the disease is being recognized more frequently but even at Duke University, where interest is great, only 45 cases have been recognized in 24 years. Cryptococcus is the most common cause of mycotic meningitis in man and most of the cases reported are of this form of the disease. Many other organ systems may be involved, particularly the lungs, bones and joints, so that infection with this fungus must be considered in a wide variety of clinical situations.

This is a welcome addition to the library of specialists interested in the field of infection. It is obviously a labor of love and has been exquisitely prepared. Truly magnificent color plates illustrate the histology and mycology of the disease and there are many black and white illustrations.

The authors are microbiologists and pathologists; this has doubtless influenced their selection of material. Only 53 of 183 pages are devoted to the clinical aspects of cryptococcosis—the remainder consider the disease in animals, its immunology and pathology, and the laboratory study of the infected tissues and the organism.

This book will not be of great interest to the practicing physician but should be available in hospital and teaching libraries.

* * *

THE BILIARY TRACT—With Special Reference to the Common Bile Duct—Julian A. Sterling, A.B., M.D., M.Med. Sc., Sc.D., F.A.C.S., Staff Surgeon, Albert Einstein Medical Center and the Graduate Hospital, Associate in Surgery, Graduate School of Medicine, University of Pennsylvania. The Williams and Wilkins Company, Baltimore, 1955. 424 pages, $10.00.

This monograph attempts to cover the biliary tract completely—from the anatomy, physiology and pathology to the clinical manifestations and the therapy of diseases of the pancreas, the gallbladder and particularly the bile ducts. A good deal of attention is devoted to the termination of the common bile duct at the papilla.

The structural and physiological facts are very well presented. Each chapter is written so that it may be read, for the most part, without reference to the other chapters. This has advantages for the reader who does not care to look into more than one section of the book, although it involves a certain amount of repetition for the reader who does. The succinctly positive style of the writing brooks no questioning by the reader. The questions are answered and the answers admit of no counter-opinion. When such writing is done in the case of syndromes as difficult to solve as postoperative dyskinesia one may ask—if it's all so patent why don't the patients respond more uniformly?

The discussions on therapy are largely surgical. The whole of Medical Management is covered in a chapter of 11 pages, 2½ of which are occupied by diet lists. And most of the rest is composed of preoperative care or management when complicating disease is present. Under these circumstances the author concedes, "The assistance here of a qualified internist and proper specialists may be necessary."

In general, however, the reviewer believes that this book is well done and fills the niche it tries to fit in—a monograph of biliary tract diseases which can be used by gastroenterologists, surgeons, general practitioners, and investigators.

TEXTBOOK OF MEDICAL PHYSIOLOGY—Arthur C. Guyton, M.D., Professor and Chairman of the Department of Physiology and Biophysics, University of Mississippi School of Medicine, W. B. Saunders Company, Philadelphia, 1956. 1030 pages, 577 figures, $13.50.

For years there have been three to four standard textbooks of medical physiology which have been revised every few years but which have retained in large measure the original format and emphasis. Advances in medical physiology have been in the direction of better quantitation of physiological data, application of physiological concepts to clinical problems, and in biophysical processes. It was with some interest, therefore, that the new book by Arthur Guyton appeared, for he is a recognized teacher, biophysicist, and physiologist.

The book is good and has several advantages over previous texts. The single authorship does much to unify the entire contents of the book and provide equal emphasis on all aspects of physiology. The discussions are clear and brief, the entire book being only 1,030 pages, yet sufficient information is given that coverage of topics is not meager. However, the relationship of physiology to clinical medicine is not particularly striking, and the dynamic aspects of physiology, so important to the clinician, are not strikingly developed.

This is a good introductory textbook of physiology, and will serve the purposes of medical students well. It cannot serve as a dynamic book of clinical physiology for the continued use and reference of the practicing clinician. It is a textbook for medical students.

* * *

LECTURES ON THE SCIENTIFIC BASIS OF MEDICINE—Volume IV, 1954-56—British Postgraduate Medical Federation, University of London. The Athlone Press, 1956. Distributed in the U. S. A. by John de Graff, Inc., 31 East 10th Street, New York 3, N. Y. 397 pages, $6.50.

The present and fourth volume of Lectures selected from those given "for young research workers, and future consultants and specialists" contains as before a miscellany of interesting topics. The lecturers are all experts in their fields and write with authority. Some of the topics are of seeming general interest to doctors such as C. H. Andrewes' article "The new look in virus research" whereas others are decidedly for the specialist as for example F. Beyel's lecture on "Some clinical aspects of abnormal growth" and J. D. Judah's "Reaction of enzymes to injury." The volume as usual is handsomely printed and illustrated.

* * *

VENOUS RETURN—Gerhard A. Brecher, M.D., Ph.D., Julius F. Stone, Professor of Physiology, Department of Physiology, College of Medicine, The Ohio State University, Columbus, Ohio. Grune and Stratton, New York, 1956. 148 pages, $6.75.

Surgeons, anesthesiologists, internists and physiologists with an interest in the heart and venous system should welcome the appearance of this unpretentious volume by an author who has made important technical contributions to the measurement of blood flow. Following brief but adequate summaries of the earlier work of others, there are described the bristle flowmeter and the results of careful studies conducted by its means. Venous hemodynamics, the collapse of veins, the effects of normal and artificial respiration, the aspirating effects of ventricular systole on blood in the collapse chamber of the central veins and similar topics are discussed. Reasons are given for consideration of the heart as a reciprocating (pressure-suction) pump, and evidence presented for a ventricular diastolic sucking force. The monograph closes after attention to the effects of valve lesions and venous return during cardiac surgery. The bibliography and index are ample, the illustrations excellent.

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Radioactive Water Decontamination Apparatus

A recent issue of the *Army Times Newsletter, Defense Times*, carried a news item that two scientists have perfected an apparatus for decontaminating radioactive water and making it fit to drink.

It removes fission products, or radioisotopes, from water by having the water pass through steel wool, clay, activated charcoal and a mixture containing resin. Waste solutions produced in various chemical processes in peacetime and the possible explosion of an atomic bomb in wartime could greatly affect the entire population. Patent rights were assigned to the government as represented by the Atomic Energy Commission.

Recent Publications

Your attention is invited to the following pertinent items in connection with civil defense:

(a) "The Biological Effects of Atomic Radiation —A Report to the Public," National Academy of Sciences, National Research Council, Washington, D. C., 1956.

(b) "Organized Medicine and Civil Disaster," by Wayne P. Chesbro, M.D., *Journal of the American Medical Association*, November 3, 1956.

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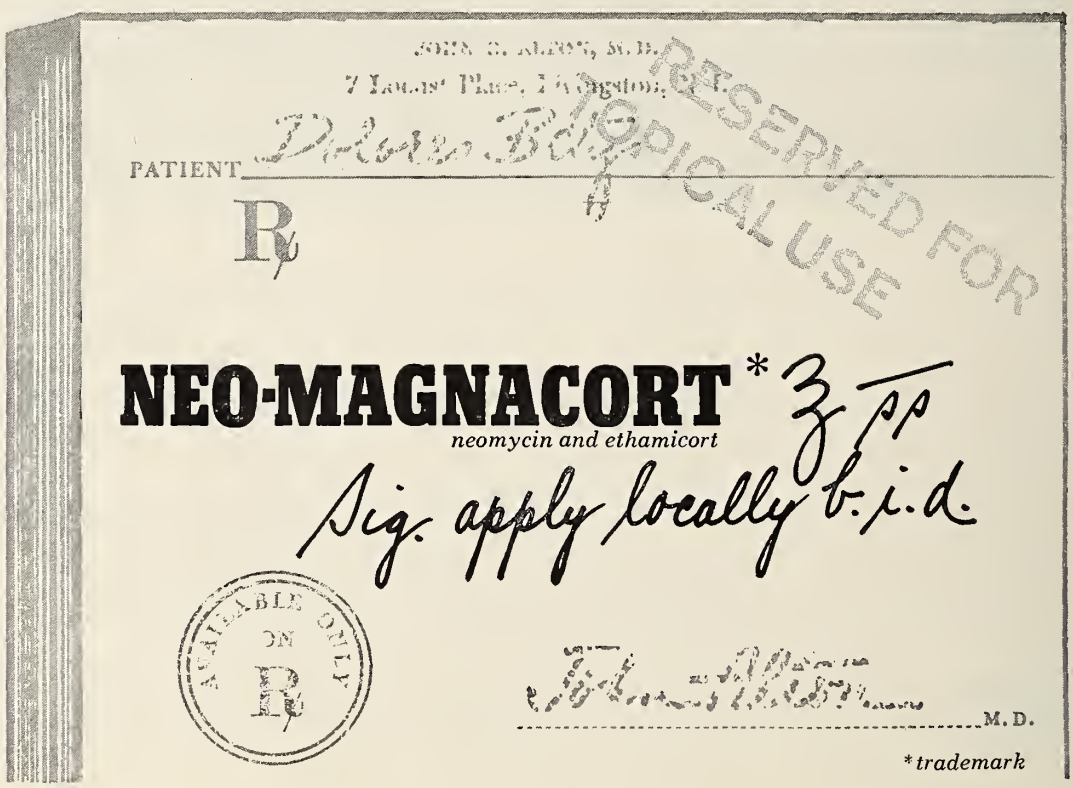

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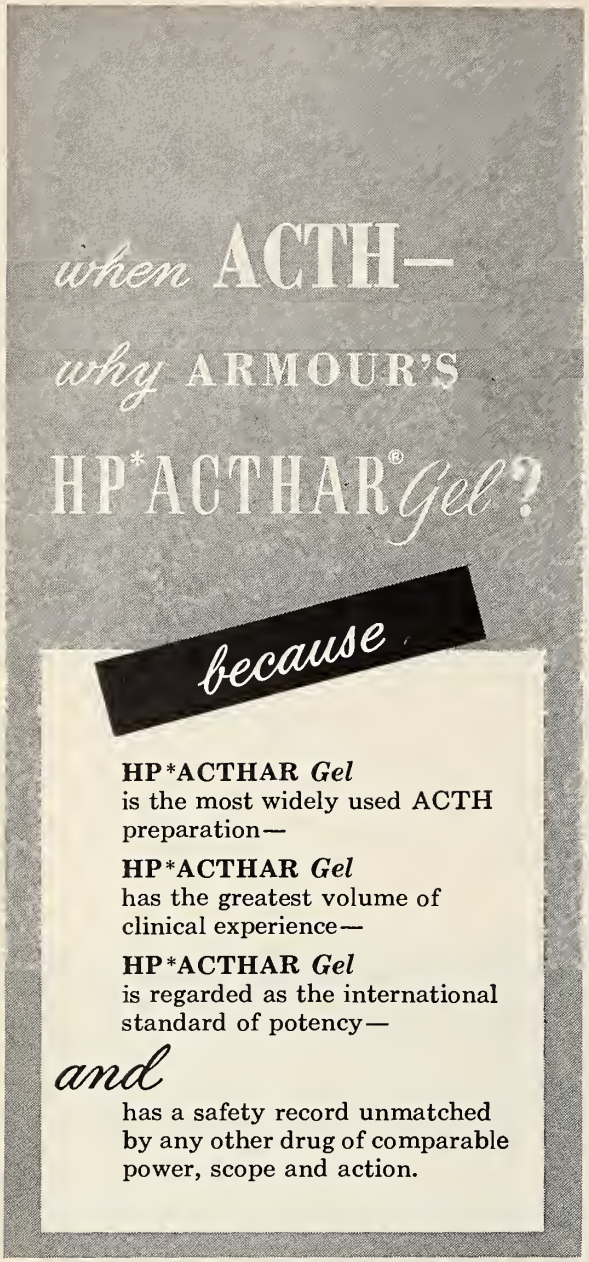

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Researchers Investigate Effects of Warming-Up

Two Massachusetts researchers said recently that general warming-up—including massage, hot showers and general exercise aimed at raising body temperature—does not improve athletic performance.

They based their observation on a series of experiments they ran on athletes at Springfield College, Springfield, Mass. The researchers did not test the effectiveness of formal warming-up—going through the movements used in the actual performance—but they noted that most authorities agree on its importance for improving coordination.

Peter V. Karpovich, M.D., and Creighton J. Hale, Ph.D., of Springfield College's department of physiology said two reasons are usually given for general warming-up: A rise in muscle temperature increases the strength and speed of muscular contraction, and the possibility of injury due to sudden forceful muscular contraction is lessened.

While no one will question the beneficial effect of warming-up when limbs are almost numb from cold, "there is a suspicion that the practice of warming-up is frequently overdone," they said in the *Journal of the American Medical Association.*

In their first experiment seven trackmen ran 440 yards after deep massage (of each leg for five minutes), after digital stroking (slow, gentle stroking of the entire leg), and after preliminary exercise (setting-up exercise, short sprints and jogging 440 yards). When the results of these tests were compared, there was no significant difference in performance following the various types of warming-up.

Since the results were the same for all types of warming-up, only digital stroking was used in the second experiment. In it five men ran 440 yards four times after light massage and twice without warming-up. Again there was no significant difference in running times. The third experiment, in which three students pedaled a stationary bicycle as rapidly as possible, was to study the effect of preliminary exercise upon performance. Twenty-four test rides were made: 12 after preliminary warm-up, which consisted of slowly pedaling the bicycle, and 12 without warm-up. Taking into consideration the standard experimental errors, there was no difference between performance with preliminary exercise and performance without it.

The running times recorded during the tests indicated that the athletes all exerted maximum effort, they said. In the first experiment on the outdoor track, two men ran their fastest time of the track season. Both performances occurred after warming-up by deep massage, but another trackman surpassed the Springfield College indoor track record for the 440-yard run while running "cold."

However, on the basis of all the test results, the researchers concluded that general warming-up does not benefit athletic performance, at least not in the 440-yard run and sprint rides on bicycle ergometers.

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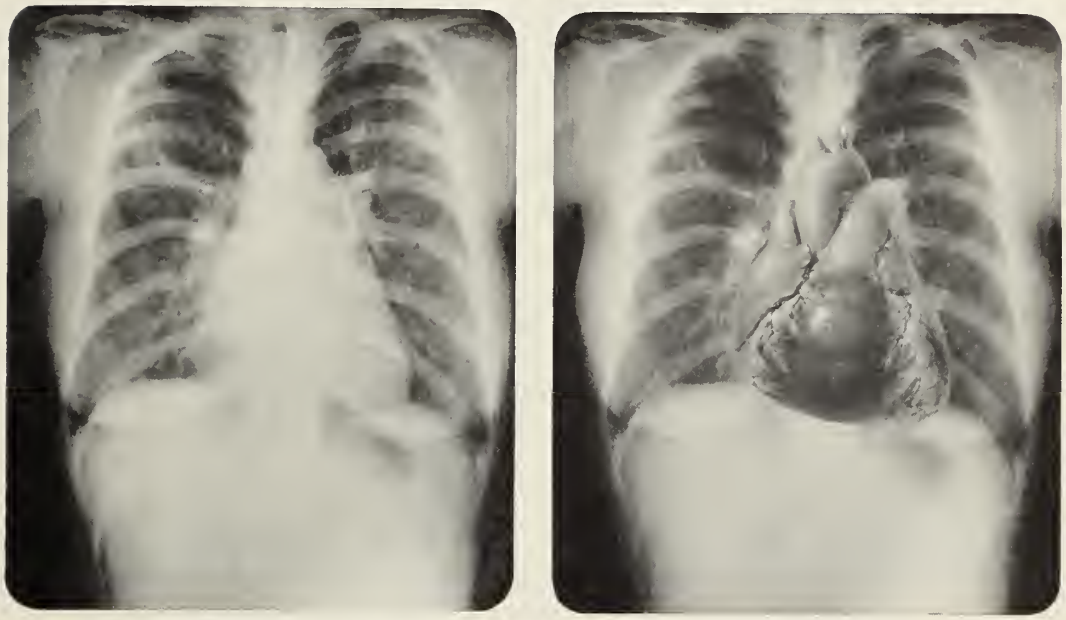

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*EHRLICH, J.C.: ARIZONA MED. 12:239 (JUNE) 1955. BIBLIOGRAPHY FURNISHED ON REQUEST

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Presented by *Postgraduate Activities Committee* of the California Medical Association, in cooperation with University of California at Los Angeles School of Medicine, Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education.

Disneyland Hotel, February 14 and 15, 1957

PROGRAM

Thursday Morning, February 14

PHARMACOLOGY

9:30-10:10 a.m.—*The Use of Androgens and Estrogens.* David H. Solomon, M.D., Assistant Professor of Medicine.

10:10-10:30 a.m.—*Narcotic Analgesics.* George W. Stevenson, M.D., Visiting Assistant Professor of Pharmacology.

11:00-11:40 a.m.—*Tranquilizers.* Sidney Cohen, M.D., Veterans Administration Center, Los Angeles.

11:40-12:30 p.m.—Discussion.

12:30- 1:30 p.m.—Lunch.
Physician Responsibility in Postgraduate Medical Education. Thomas H. Sternberg, M.D.

Thursday Afternoon, February 14

HAND SURGERY

1:30- 2:15 p.m.—*Surgical Anatomy of Forearm and Hand.* Franklin L. Ashley, M.D., Assistant Clinical Professor of Surgery.

2:15- 3:00 p.m.—*Functional Examination of the Hand and Purposeful Splinting.* James Wilson, M.D.

3:00- 3:45 p.m.—*Treatment of Primary Injuries.* Franklin L. Ashley, M.D.

3:45- 4:30 p.m.—*Tendon and Nerve Repair.* James Wilson, M.D.

4:30- 5:15—*Fractures of the Hand and Wrist.* Theodore A. Lynn, M.D., Associate Clinical Professor of Surgery (Orthopedics).

5:15- 5:45 p.m.—Question and Answer Period.

7:00 —Dinner.

Friday Morning, February 15

SPECIAL DISEASES AND DIET THERAPY

Wendell H. Griffith, Ph.D., Chairman, Professor and Chairman of the Department of Physiological Chemistry.

9:30-10:00 a.m.—*Basic Principles.* Wendell H. Griffith, Ph.D.

10:10-10:50 a.m.—*Dietary Restriction of Sodium and Fat.* Arthur U. Rivin, M.D., Clinical Instructor in Medicine.

11:00-11:40 a.m.—*Factors Affecting Inanition and Obesity.* Sherman M. Mellinkoff, M.D., Assistant Professor of Medicine.

11:40-12:30 p.m.—Panel Discussion. Wendell H. Griffith, Ph.D., and Staff.
Luncheon Speaker: Roger O. Egeberg, M.D.: *"Coccidioidomycosis."* (Sponsored by Orange and Riverside County Tuberculosis and Health Associations.)

Friday Afternoon, February 15

EMERGENCY CARE OF INJURIES

2:00- 5:00 p.m.—Panel Discussion.

Panel Members: Robert W. Bailey, M.D., Assistant Professor in Surgery (Orthopedics); David B. Sheldon, M.D., Instructor in Surgery; W. Eugene Stern, M.D., Associate Professor in Surgery (Neurosurgery), Moderator.

Assessment of the acutely injured patient, transportation, bandaging and splinting, methods of examination to ascertain the degree of injury.

Priority of management, preparation of the patient for surgical treatment in hospital.

Special consideration of the head injured patient, emergency treatment which should be offered to the head injured patient, the management of the urgent surgical problems prior to the arrival of any specialist team.

The handling of the "walking wounded." The matter of treatment of fractures on an Outpatient basis and in general the method of wound management—both the cleanly incised and contaminated wound as well as the grossly dirty contaminated wound.

HOSTS: Riverside County Medicol Society • **REGIONAL CHAIRMAN:** H. C. Borron, M.D., 4030 Eighth Street, Riverside • **FEE:** $15.00. For additionol information, contoct Postgroduote Activities office, Colifornio Medicol Associotion, 417 South Hill Street, Los Angeles 13. Specio l room rote ot Disneylond Hotel: $12.00 per doy (eoch room will sleep up to 4 people). Moke hotel reservotions eorly directly with hotel.

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*Stewart, B. L., and Rowe, H. J.: J. Am. M. Ass. **160**:1221, 1956.

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Medical Interest, Action in Sports Outlined

Recent activities of doctors in the field of athletics indicate that medical interest in the field is rising and will become even greater in the future, according to two editorials in a recent issue of the *Journal of the American Medical Association.*

An unsigned editorial, which outlined the A.M.A.'s activities in sports medicine, challenged the profession to increase its activities in preventing athletic injuries. The A.M.A. already has organized a committee on sports injuries, which met recently in Seattle and considered suggestions for certain rule revisions that would give more protection to athletes.

Meanwhile the A.M.A.'s bureau of health education is continuing over 20 years of work with educational authorities to help make school sports and physical education programs safe and wholesome. This is done in meetings with high school athletic groups and educational association officials, articles in *Today's Health,* an A.M.A. publication, and pamphlets.

The bureau concentrates its interest in high school athletics, where sports participation is the greatest and where more than half of all football deaths have occurred in the past 25 years.

As a result of this effort by doctors, educators and coaches, some 20 state high school athletic associations now have medical advisory committees.

Medical interest in sports is illustrated by research being carried on in such institutions as the aeronautical laboratory of Cornell University. There doctors are working to make football equipment safer.

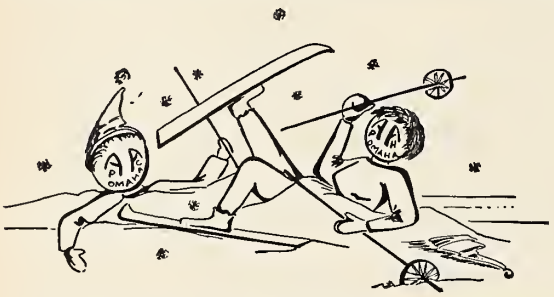
In the second editorial, Dr. Allan J. Ryan, Meriden, Conn., a member of the A.M.A. committee on sports injuries, listed other recent developments in the field of sports and medicine. These include the decision to appoint a Presidential Council on Youth Fitness at the cabinet level and to create a citizen's advisory committee to the council, and the organization of the American College of Sports Medicine and the Western Council of Sports Medicine.

Dr. Ryan noted that the appearance of such organizations "gives further indication that we are on the threshold of an even greater interest in the scientific study and development of sport in the United States."

C.M.A. Annual Session

Los Angeles

April 28-May 1, 1957



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Study Report on Emergency Medical Care in Disasters

The Committee on Disaster Studies of the National Academy of Sciences, National Research Council recently issued its sixth disaster study report. This latest report deals with Emergency Medical Care in Disasters and is based upon a summary and study of recorded disaster situations and experiences.

The report indicated the need for a central authority in charge of medical management of the disaster and stated it should be arranged in advance. In brief, organization and pre-planning are essential to effectively cope with disaster situations. Another problem which is bothersome and ofttimes overlooked is jurisdictional disputes between agencies in disaster operations. The FCDA and the American Red Cross have an agreement that assigns to the former the primary responsibility for rescue, evacuation and first aid, and to the latter the responsibility for relief and welfare activities when disaster occurs.

(Continued on Page 104)

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General Surgery, One Week, February 11
Surgical Anatomy & Clinical Surgery, Two Weeks, March 11
Surgical Pathology, 2 or 4 Weeks, by appointment
Fractures & Traumatic Surgery, Two Weeks, March 11
Gallbladder Surgery, Three Days, April 8

GYNECOLOGY & OBSTETRICS:
Office & Operative Gynecology, Two Weeks, February 11
Vaginal Approach to Pelvic Surgery, One Week, February 4
General & Surgical Obstetrics, Two Weeks, February 25

MEDICINE—Electrocardiography & Heart Disease, Two-Week Basic Course, March 11
Gastroenterology, Two Weeks, May 13
Gastroscopy, Two Weeks, March 18

RADIOLOGY—Diagnostic X-Ray, Two Weeks, February 4
Clinical Uses of Radioisotopes, Two Weeks, May 6
Radioactive Iodine, One Week, April 1

UROLOGY—Two-Week Course, April 1
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PEDIATRICS—Two-Week General Course, May 13

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1. Johnston, R.L.: J. Indiana St. M.A. 46:869, 1953. 2. McHardy, G., and Browne, D.: Southern M. J. 45:1139, 1952.

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Physicians Explain Artery Graft Bank

Almost any large community hospital can develop its own artery graft bank without too much expense and without hiring additional highly trained personnel, three Philadelphia doctors said recently.

Writing in a recent issue of the *Journal of the American Medical Association,* they outlined their experiences in the Hospital of the University of Pennsylvania.

They noted that the replacement of diseased. obstructed or injured major blood vessels with grafts from the arteries of other persons has gained widespread acceptance. More grafting procedures will undoubtedly be done in the future. but grafts are difficult to obtain. However, experience at the University of Pennsylvania indicates that any large hospital can develop a bank. they said.

The Pennsylvania bank supplies the university hospital, as well as 24 other hospitals in the area. In turn, the hospitals contribute grafts to the bank.

When the bank was started in 1953, a freeze-drying unit was built for less than $500. It has required practically no maintenance. Originally the grafts were obtained under sterile precautions from fresh cadavers free of infection or other malignant disease. The doctors have since learned that any human arteries not showing obvious abnormalities can be used safely.

In addition, the strict sterile precautions are no longer necessary. After removing the artery, it is sterilized, placed in sealed glass tubes, quick-frozen in a mixture of acetone and dry ice, and then slowly dried. The changes in procedure made it much easier to obtain the necessary number of grafts, they said.

They also reported on the results with the first 100 consecutive grafts taken from the bank. The operations were done by 17 different surgeons in 10 different hospitals, with the majority at the Hospital of the University of Pennsylvania.

Sixty-five grafts were used to replace diseased or obstructed sections of the aorta, the major artery leading out of the heart, while the remainder were used in other arteries in the body. The results were classified as good in 79 of the 100 cases, as fair in two cases and as poor in six. Thirteen patients died; of these, seven had had very poor prospects before operation. Only one "graft failure" occurred after operation.

The authors are Drs. William S. Blakemore, Herndon B. Lehr, and Brooke Roberts of the School of Medicine of the University of Pennsylvania.

C. M. A. Annual Session
Los Angeles
April 28 - May 1, 1957

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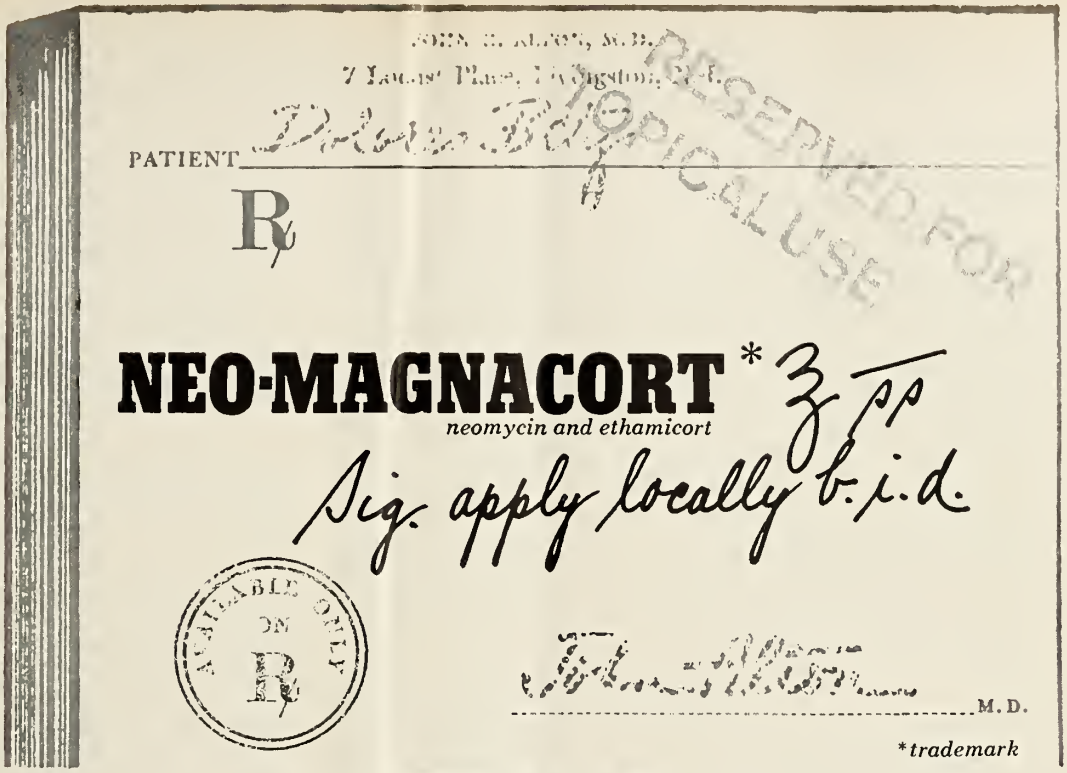

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Pres., Grant Ellis, 2298 Durant Ave., Berkeley.
Secy., John Morrison, 333 Estudillo Ave., San Leandra.

Butte-Glenn Medical Society. Meets Fourth Thursday.
Pres., Wm. Chiapella, 184 E. Fifth St., Chico.
Secy., Rufus C. Rucker, 188 E. Fifth St., Chico.

Fresno County Medical Society, 2811 North Blackstone, Fresno 3. Meets Second Tuesday, 6:30 p.m., Sunnyside Country Club.
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Secy., David R. Taylor, 715 Patterson Bldg., Fresno.

Humboldt County Medical Society. Meets Second Thursday.
Pres., Herman A. Iverson, 507 F St., Eureka.
Secy., Walter H. Yeider, 730 Seventh St., Eureka.

Imperial County Medical Society. Meets Second Tuesday, 8 p.m., Pioneer Memorial Hospital, Brawley.
Pres., A. A. Adames, I. V. Tuberculosis Sanatorium, Holtville.
Secy., Ernest Brock, 200 S. Imperial Ave., Imperial.

***Inyo-Mono** County Medical Society. Meets Fourth Tuesday except December, January, February.
Pres., J. Lloyd Mason, 512 West Line, Bishop.
Secy., Robert W. Denton, 611 W. Line, Bishop.

Kern County Medical Society, 2603 "G" Street, Bakersfield. Meets Third Tuesday, 7:30 p.m., Saddle and Sirloin, except June, July, August.
Pres., John K. Coker, 2603 G St., Bakersfield.
Secy., Wm. H. Moore, Jr., 2603 G St., Bakersfield.

***Kings** County Medical Society. Meets Second Monday, 8:00 p.m., Legion Hall, Hanford.
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Lassen-Plumas-Modoc County Medical Society. Meets on call.
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Pres. Patrick R. Allanson, 728 S. State St. Ukiah.
Secy., R. B. Smalley, 361 S. Main, Willits.

Merced County Medical Society. Meets Fourth Thursday, Hotel Tioga, Merced.
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Secy., Max Brannan, 650 W. 20th St., Merced.

Monterey County Medical Society, P. O. Box 308, Salinas. Meets First Thursday.
Pres., Keith Corp, 11 Maple St., Salinas.
Secy., Donald Taugher, 58 Via Castanada, Monterey.

Napa County Medical Society. Meets Second Wednesday.
Pres., Harry Ehrlich, 1130 First St., Napa.
Secy., Thomas W. Ledwich, 1130 First St., Napa.

Orange County Medical Association, 1226 N. Broadway, Santa Ana. Meets First Tuesday, 7:00 p.m.
Pres., Carl J. Paul, 605 East Chapman Ave., Orange.
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Placer-Nevada-Sierra County Medical Society. Meets Second Wednesday.
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Sacramento Society for Medical Improvement, 2731 Capitol Ave., Sacramento. Meets Third Tuesday, 8:30 p.m., Sutter Hospital Auditorium.
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San Mateo County Medical Society, 122 Second Ave., San Mateo. Meets Third Tuesday.
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Santa Barbara County Medical Society, 300 West Pueblo St., Santa Barbara. Meets Second Monday, Cottage Hospital.
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Santa Clara County Medical Society, 1024 The Alameda, San Jose 26. Meets Third Monday except in July and August.
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Santa Cruz County Medical Society. Meets every Second Month, Second Tuesday. Time, place to be announced.
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(For roster of C.M.A. committees and other organizations, see last month's issue.)

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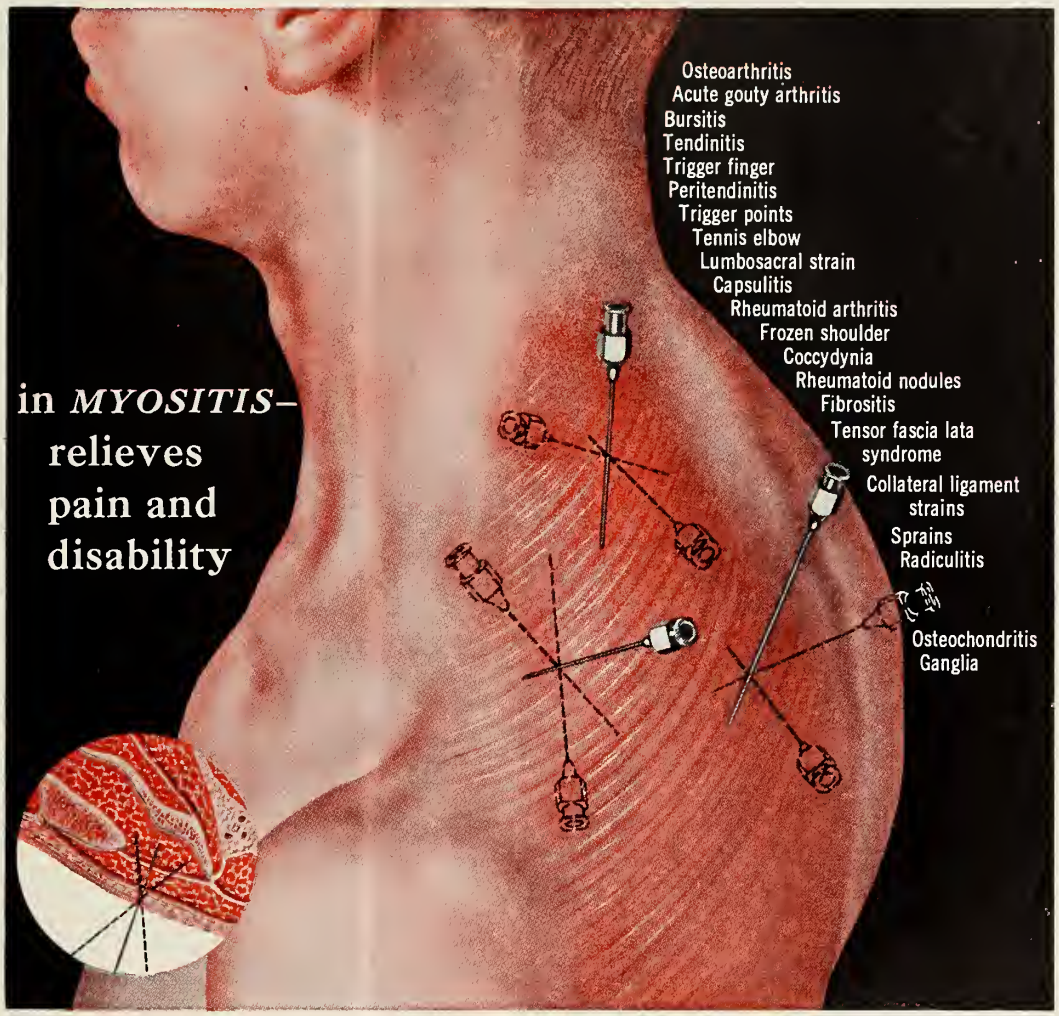

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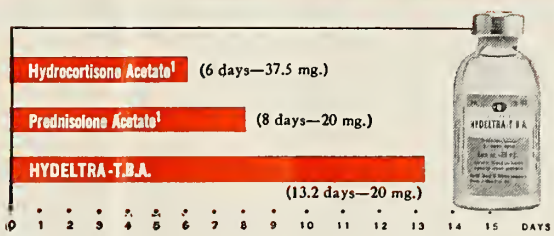

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1. Hollander, J. L., *Paper read at conference in New York City, May 31 and June 1, 1955*

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American Medical Education Foundation

At the opening session of the House of Delegates in Seattle, the A.M.A. announced that it is making another gift of $125,000 to the American Medical Education Foundation, bringing to $343,000 the total amount which the A.M.A. has contributed to the Foundation this year.

In addition to the A.M.A. contribution, four state medical societies presented checks to the Foundation which will bring the contributions from physicians and medical societies to more than one million dollars for 1956. The states and their amounts follow:

California, $132,981; New Jersey, $25,000; Utah, $11,870; and Arizona, $3,695.

The California check was presented by Dr. Donald Charnock, Los Angeles, president of the state society. In the presence of members of the House, Dr. Charnock handed the check to a fellow Californian, Dr. Dwight H. Murray, president of the A.M.A. The California check represented donations from every one of the 15,532 physicians belonging to the state society. Dr. Murray turned over the California check, as well as the other ones, to Dr. Louis H. Bauer, New York, president of the Foundation.

The practicing physicians of the nation have contributed nearly six million dollars to the Foundation since it was founded in 1951. These contributions, going to the 82 medical schools in this country, can be used as the schools see fit.

"No strings are attached to the money going to the medical schools," Dr. Bauer said. "This is the physicians' way of demonstrating to the American people the importance of freedom in medical education."

—A.M.A. Secretary's Letter

Angina Pectoris Treatment Improves in Last 30 Years

One generation ago the diagnosis of angina pectoris was almost a death sentence; in 30 years it may be a rare condition, a New York cardiologist recently said.

Angina pectoris, a severe pain in the chest which sometimes carries with it a feeling of suffocation and a fear of impending death, is one of the most painful effects of coronary artery disease. Arteriosclerosis produces a narrowing of the arteries of the heart which reduces the normal flow of the blood through the heart. Effort or excitement may cause spasms in the heart arteries which then produce pain.

In a signed editorial in a recent issue of the *Journal of the American Medical Association*, Dr. Arthur M. Master of Mount Sinai Hospital said there have been many improvements in the treatment of angina pectoris, but the major change has been one of approach to the condition. It is now realized that arteriosclerosis is a disease like any other and is not an inevitable process of aging. As a result there has been an unparalleled surge of research, and a more optimistic outlook has developed among physicians and patients with angina.

Thirty years ago the severe pain that the patient suffered, the little understood prevention of anginal pain and the condition's inadequate treatment engendered fears that could not be dispelled, he said.

The agonizing dread then associated with angina resulted largely from the existing economic and psychological factors. A man did not dare be absent from work or he would lose his job, so he ignored the pain and kept working thus delaying diagnosis and treatment. The late diagnosis and "almost universal inadequacy of treatment" gave the impression that angina pectoris was totally and permanently disabling.

However, since then the entire approach to prevention and treatment has improved. Now nitroglycerin is given to prevent the pain, not just to stop it once it begins. Formerly as a last resort, some patients underwent thyroid gland surgery. Now similar effects may be obtained by using radioactive iodine. Moderate use of tobacco is no longer banned. With the improved techniques in anesthesia and surgery, patients can now undergo most major operations with safety. And they can even take plane trips, because of the development of pressurized airplane cabins and anti-motion sickness drugs.

The designation of coronary disease and angina is no longer a stigma, Dr. Master said. Its presence generates caution, but not panic. Lighter work is now available for persons with heart disease. Unreasonable fear of heart trouble is on the wane, and people are no longer afraid to be seen leaving a cardiologist's office. In fact, "to discuss one's electrocardiogram is as acceptable as to discuss one's analyst," he said.

However, until a specific prevention and treatment of coronary artery disease, and in turn angina pectoris, has been developed, general measures aimed at keeping the patient comfortable, at a reasonable weight, and free from tension remain of great importance.

"These measures together with a confident outlook will prolong the life of the patient. Thirty years hence it is likely that enzymes, hormones and other perhaps as yet unidentified biochemical agents will make angina pectoris a truly rare condition," Dr. Master concluded.

There are many short periods of time
which, if measured correctly, are considered valuable
diagnostic durations — such as the P-R interval in ECG interpretation,
and the minutes during which a patient consumes oxygen in
a BMR test. If the readings related to these measurements are to be used
with complete confidence, it is wise to consider another important
measure of time — and that is the *background* of the
instruments which
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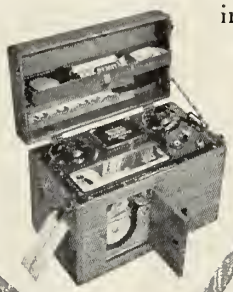
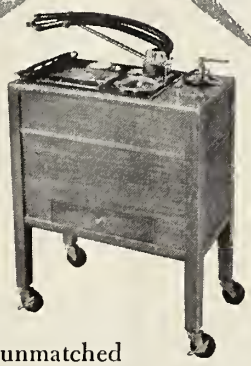


The TIME TESTED *diagnostic team*



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Hypnosis May Solve Some Anesthetic Problems

Hypnosis, not now recommended for general use as an anesthetic, may solve some special anesthetic problems, according to three Dallas, Texas researchers who have used it in several unusual cases.

They reported using hypnosis for delivery of a baby when the mother was a polio victim, for a dental procedure in a woman sensitive to chemical anesthetics, and in three other special cases.

Harold B. Crasilneck, Ph.D., James E. McCranie, M.D., and M. T. Jenkins, M.D., reported their cases in a recent issue of the *Journal of the American Medical Association.*

They said they have been investigating hypnosis for anesthesia for three years. They have found it useful under these special conditions:

(1) When chemical anesthesia or depressants may be dangerous because of respiratory or heart disease; (2) when a patient is sensitive to regular chemical agents; (3) when repeated use of anesthetics weakens a patient who is already physically disturbed; (4) among patients whose fear of general anesthesia is so great it presents serious risks; (5) when the cooperation of the patient may be needed during surgery; and (6) when the procedure may be so lengthy that general anesthesia may be too weakening.

Use of hypnosis presented no difficulty in the delivery of a pregnant woman suffering polio, or in several dental procedures—lasting about two hours each—in a woman who suffered swelling of the face and body, hives, and nausea from general anesthesia.

In the third case, a 14-year-old girl who had suffered epileptic convulsions after a head injury was scheduled for a brain operation. However, the physicians needed to take electric wave-pattern tests of the brain during surgery, which might have been distorted by anesthesia. Hypnosis was used because it would not interfere with the tests.

During most of the operation this patient was "relaxed and comfortable," although she complained of mild pain at one point in the nine-hour procedure. An interesting fact was that the patient suddenly awoke from the hypnotic state when a certain part of the brain was touched.

This led researchers to "considerable interest and speculation" as to the part played by the nervous system in hypnosis, and "opens another avenue for investigation," they said.

Another use of hypnosis was on a man who became more and more fearful of anesthesia after

(Continued on Page 17)

Message: **WHILE YOU WERE OUT**

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New Multiple Patch Test Technique Described

Two dermatologists recently described a new technique requiring only an elastic bandage, several gauze squares and old x-ray film, for running at least 10 simultaneous patch tests for allergies.

Dr. Raymond A. Osbourn, Washington, D. C., and Dr. Thomas W. Tusing, Vienna, Va., said in a recent issue of the *Archives of Dermatology*, published by the American Medical Association, that their multiple patch method is rapid, convenient, and uncomplicated.

They use an elastic bandage 18 to 20 inches long, which is cut into strips and to which gauze squares are attached, giving it a gridiron appearance. Test materials—creams, saturated felt pads or pieces of cloth—are applied to the gauze squares. Open spaces between the squares keep the test materials from spreading.

The whole bandage is placed on the upper arm and held in place with adhesive tape or a self-sealing gauze requiring no tape.

The doctors also make a chart with which to read the results of the tests. The chart is something like the cut-out key used to grade intelligence tests. The chart, made from an old x-ray film, has openings cut to fit the outline of the gauze squares of the bandage. After removing the bandage, the plate is placed over the area covered by the bandage and the skin contact areas are easily located.

Hypnosis May Solve Some Anesthetic Problems

(Continued from Page 16)

numerous changes of dressing and other procedures for severe burns. An extensive procedure was done under hypnosis and the patient also felt no pain afterwards.

The final case was that of a woman who needed a pelvic examination for diagnosis, but who refused it because of an emotional difficulty. Anesthesia was ruled out because she had severe heart disease, but the examination was successfully carried out under hypnosis.

"There are definite disadvantages in the use of hypnosis," the scientists pointed out. "There are, for example, many individuals who cannot be hypnotized. . . . It may be originally time consuming.

"It also requires special training and skill on the part of the hypnotist. There are also risks involved in hypnotizing patients who have psychological problems. A careful psychiatric evaluation should be performed prior to hypnosis."

They said for these and other reasons hypnosis "should be reserved for cases with special indications. . . ."

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New Remedy Shown To Have No Effect on Colds

Citrus bioflavonoids with ascorbic acid, recently publicized as a common cold preventive or treatment, has no effect on the course of the common cold, two different groups of researchers said recently.

Drs. Harry E. Tebrock, New York; Joseph J. Arminio, Ossining, N. Y., and John H. Johnston, West Hartford, Conn., reported one study in which 1,900 persons with colds were given bioflavonoids (extracts from citrus fruit peel) and ascorbic acid (Vitamin C) alone or in combination.

"The overwhelming impression gained from all the data is the singular lack of effect produced by either the bioflavonoid or the ascorbic acid," they concluded. Another group of researchers found that ascorbic acid alone had some effect on cold improvement.

Dr. Tebrock and associates pointed out in a recent issue of the *Journal of the American Medical Association* that evaluation of a new cold treatment has always proved difficult. Any evaluation must be based on observation of the patient's symptoms, since no adequate laboratory tests have been developed to show the effect of a drug on common cold virus.

There are many remedies available for the common cold and almost all of them have some effect—at least in making the person more comfortable. While they may relieve the symptoms, they do not get at the underlying cause of the cold.

To prove that a drug is a "cure," it must be shown to do more than just relieve symptoms. It must be shown to exert a definite effect on the underlying cause and/or it must shorten the course of the illness, they said. Also it must give better results than those achieved by the usual remedies. Their tests showed bioflavonoids did none of these things.

Dr. Tebrock and his associates then explained why bioflavonoids and ascorbic acid have been tried as a cold remedy. In the past decade much attention has been given to the treatment of colds by drugs that strengthen body tissues against viruses.

It has been theorized that the addition of ascorbic acid to the diet increases the strength of the walls of the capillaries, so they are more able to keep out viruses. Citrus bioflavonoids have been suggested as a cold treatment because they are thought to bolster ascorbic acid's effect on capillary wall strength.

Dr. Tebrock and his associates set up an experiment in which 1,900 persons with common colds were divided into four groups: Some receiving lemon or orange bioflavonoid; others bioflavonoid plus ascorbic acid; others only ascorbic acid, and others placebos or "dummy" pills containing neither of the drugs.

The patients were re-examined three days after their initial visit to the doctor. It was felt that, if

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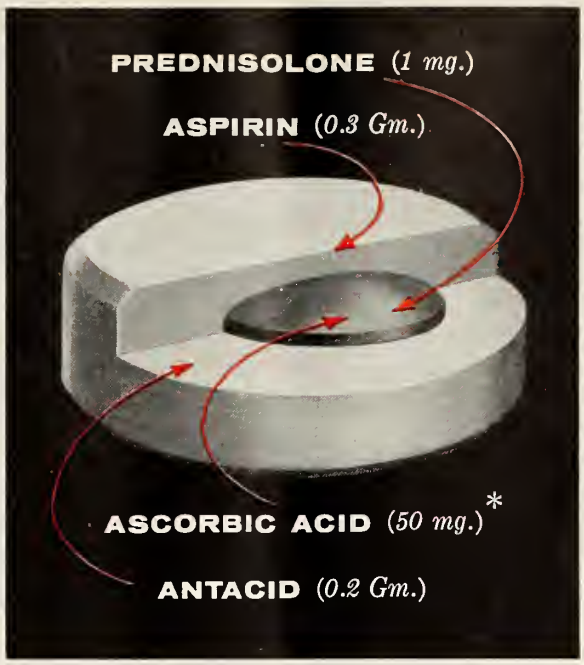

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New Remedy Shown To Have No Effect on Colds

(Continued from Page 24)

colds were stopped to an appreciable degree by one or both of the drugs, the number of cures after three days should be appreciably higher than in those taking placebos, they said.

They found on re-examination that the distribution of symptom improvement among the four groups as judged by both patients and doctors was almost identical, "with absolutely no statistically significant differences."

They did not evaluate the use of these drugs in the prevention of the common cold, as did Drs. Warren L. Franz, G. Winthrop Sands and Henry L. Heyl of Dartmouth Medical College, Hanover, N. H., who also reported their study in the same issue of the *Journal of the American Medical Association.*

The New Hampshire doctors tested the effects of naringin (a bioflavonoid extracted from grapefruit peel) and ascorbic acid in 89 medical students and nurses for three months. One group received both drugs, another only ascorbic acid, another only naringin, and another placebos.

Naringin had no effect on the number of colds which developed in the study group nor on the

(Continued on Page 44)

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Q. *What daytime dosage is recommended?*

A. Adult dose ranges from 100 mg., b.i.d., to 200 mg., t.i.d., depending on patient's condition and response.

Q. *Are the new dosage sizes useful for insomnia, too?*

A. Yes. 500 mg. remains the average hypnotic dose; but if your patient also is taking Placidyl by day, 100 or 200 mg. at bedtime is usually enough to stop insomnia.

Q. *Is Placidyl sold under other trade names?*

A. No. It is a mild, halogenated carbinol, structurally unique, made only by Abbott. Supplied in 100-mg., 200-mg., and 500-mg. capsules, bottles of 100. Abbott

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Role of Physicians in the Destiny of the Nation

We are happy to send you, as a sort of dividend, this SPECIAL REPORT. It is a little out of our line, being an excursion into history. It is the story of the 359 physicians who, over the years, have helped to shape the destiny of the country as members of the United States House of Representatives and Senate.

The story is interesting and in some ways revealing. For example, at least 13 also were state or territorial governors, and three states selected men from this group as their first governors. If the REPORT does nothing else it will document the point we have been making for years: There is nothing new, unusual or improper in doctors taking an active part in the national government; they have been doing so from the very beginning of the Republic.

We are not offering this as a complete or definitive historical work on doctors in government. It deals only with those who served in the House or Senate. Obviously we can't touch on all of them, but we have said something about more than 50 whose careers seemed to us to be particularly outstanding or unusual.

The basis for this REPORT is a complete listing, extracted by our librarian from historical documents, of all physicians who have served in the national legislature. It shows their names, party, dates of birth and death, years served in Congress and occasionally other information about them. If enough interest is shown to justify the cost, we will have the list mimeographed for those who request it.

THOMAS H. ALPHIN, M.D.
Director, Washington Office
American Medical Association

DOCTORS WERE IN ON THE GROUND FLOOR: FIVE SIGNED DECLARATION

In 1776 Josiah Bartlett was 47 years of age, described by his biographer as "a tall man with a fine figure . . . who . . . wore his auburn hair in a queue." He was considerably more than that. He was a distinguished New Hampshire physician and an able and ardent patriot. He already had suffered for his interest in politics; he had been ousted from his post as justice of the peace by the Royal Governor of Massachusetts, and had seen his home burned to the ground.

By 1776 Dr. Bartlett clearly had made his choice. So it was natural that as a Massachusetts delegate to the Continental Congress he signed the Declaration of Independence. Perhaps it was only an accident, but he was the second person to sign the engrossed document at the formal ceremony on August 2 of that year. Dr. Bartlett was not the only physician to sign the Declaration. There were four others: Drs. Lyman Hall, Benjamin Rush, Matthew Thornton and Oliver Wolcott. All except Dr. Wolcott

(Continued on Page 38)

announcing

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Role of Physicians in the Destiny of the Nation

(Continued from Page 33)

were in active practice at the time; while trained in medicine, he had given it up for law.

With all the others who signed the document—the lawyers, the statesmen, the soldiers, the businessmen—these five doctors were to achieve a degree of immortality. They were also symbolic of the strong interest the medical profession has taken in national legislation over the years.

DOCTORS IN CONGRESS THROUGH THE YEARS: BY STATES, BY PARTIES

Dr. Bartlett had been one of four physician members of the Second Continental Congress in 1775. The next year the Colonies sent eight doctors to the deliberations. In the critical years of 1783-84, eleven doctors were in the young Congresses that struggled to keep the states united. It is a tribute to the versatility of the profession that in the 181 years since 1775 doctors have sat in every Congress.

Research by this office carries down through nearly two centuries, Congress by Congress, the story of the medical profession's contribution to the development of the American legislature. Here are some statistics on the doctors' participation:

Total Representation. Six physicians now are members of the House of Representatives of the 85th Congress that convenes in January. Counting them, a total of 359 physicians have served in American Congresses since 1775, including 35 Senators. Of the 359, eleven practiced another profession—generally law—as well as medicine, 33 were not active in practice when elected, and 18 had graduated in medicine but never practiced.

By Parties. A total of 165 physicians were Democrats. Other party representation: Republicans 67, Whigs 30, Federalists 17, Jacksonian Democrats 6, American party 5. National Republicans 2, Independents 2. and one each from six other minor parties. There is no record of party affiliation for 32 doctors in Congress, and party labels were not attached to the 27 who sat in the Continental Congress between 1775 and 1788.

By States. The large states that were members of the original 13 Colonies naturally have supplied the most doctors to Congress. Leading the list is Pennsylvania with 52. Next are New York with 48 and New Jersey, 30. Ohio, although coming into the Union later, has sent 26 doctors to Congress. Other totals: Georgia 17, Kentucky 12, Maryland 16, Massachusetts 13, Missouri 10, New Hampshire 14, Virginia 18, North Carolina 11. Connecticut has elected six to Congress. Delaware seven, Illinois five, Indiana seven, Louisiana five, Michigan five, South Carolina five, Tennessee eight. The following have elected from one to four physicians as Representatives or Senators: Alabama, Arkansas, California,

North Dakota, Florida, Idaho, Iowa, Maine, Minnesota, Montana, Nebraska, New Mexico, Oregon, Rhode Island, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin and Wyoming. Puerto Rico's present Resident Commissioner also is a physician. Dr. A. Fernos-Isern. He is a non-voting member of the House.

SKETCHES OF A FEW FAMOUS AMERICAN PHYSICIAN-LEGISLATORS

During the troubled years from 1810 to 1949—the War of 1812, the struggle for expansion, the Mexican War, the early political skirmishes over slavery—there were at least eight and usually 12 to 18 doctors in Congress. In the following few sessions of Congress, the years leading up to the Civil War, the profession also was well represented, having from seven to 15 of its members in the House or Senate. During the Civil War, although a high percentage of the doctors were with the armies, between five and seven usually were seated in Washington.

These statistics may be important, but they show nothing at all about what these men were like as men, or what impelled them into the turmoil of national politics. In subsequent paragraphs some of them will be described in other connections—as state governors, as military line officers, as physician-legislators who also made unusual contributions. Below are brief sketches of a few not otherwise described in this report who were outstanding.

Matthew Thornton, a contemporary of Dr. Bartlett and the third signer of the Declaration of Independence, was a colonel in the New Hampshire troops almost 30 years before the Revolutionary War. Massive physically as well as mentally, he is said to have had "black and penetrating eyes and an invincibly grave expression." After one session of the Continental Congress, he was appointed to his state's supreme court and thereafter did not practice medicine. One example of his mental capacity: When past 80 years of age he wrote a metaphysical treatise.

Lyman Hall, another signer of the Declaration, was born in Connecticut, graduated from Yale, then migrated to St. John's Parish on the Georgia coast, where he gathered around him a colony of intellectuals and independents. When he arrived at the Continental Congress in 1775, John Adams described him as "intelligent and spirited . . . made a powerful addition to our phalanx." Like Dr. Bartlett and most of the others, he suffered for his views. His home was burned by the British in 1778. Later, as governor of Georgia, he helped to found the University of Georgia. Throughout his career he practiced medicine while also prospering as a rice planter.

Benjamin Rush of Pennsylvania, another practicing physician who signed the Declaration, was easily

(Continued on Page 47)

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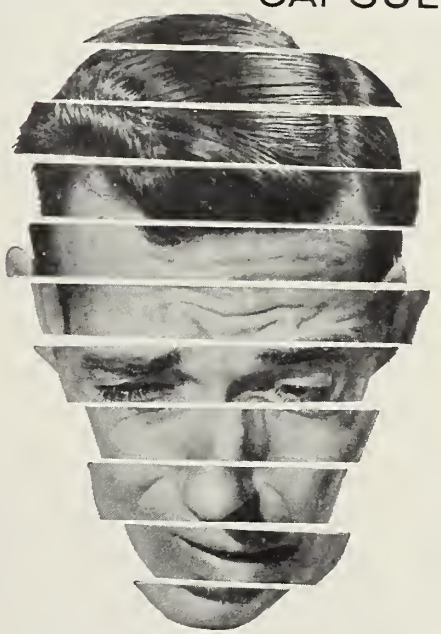

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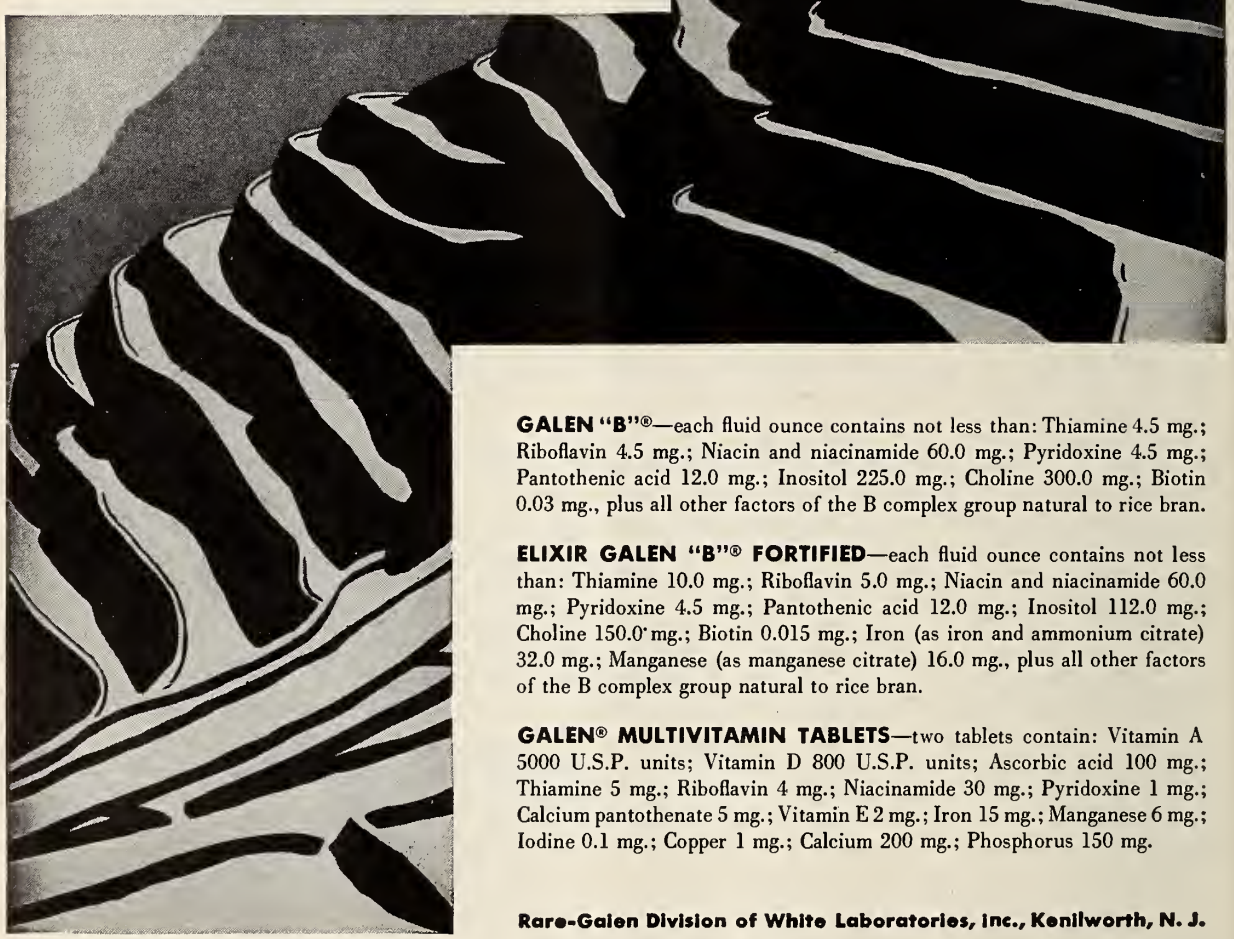

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New Remedy Shown To Have No Effect on Colds

(Continued from Page 28)

course of the colds once they started, the doctors said.

Part of the purpose of the study was to see if the administration of a bioflavonoid actually raised the level of ascorbic acid in the blood, which in turn would affect capillary wall strength. The researchers found that the bioflavonoid did not raise the ascorbic acid level of the blood but most persons receiving ascorbic acid did show higher levels.

Those receiving ascorbic acid developed just as many colds as those not receiving it; however, those taking ascorbic acid showed a more rapid improvement in their colds than those not taking it.

An interesting sidelight of the study was the discovery that women consistently showed higher blood ascorbic acid levels than men, regardless of what they took.

Dr. Tebrock is medical director of Sylvania Electric Products, Inc., while Dr. Johnston is medical director of Pratt-Whitney and Company, Inc., West Hartford, Conn.

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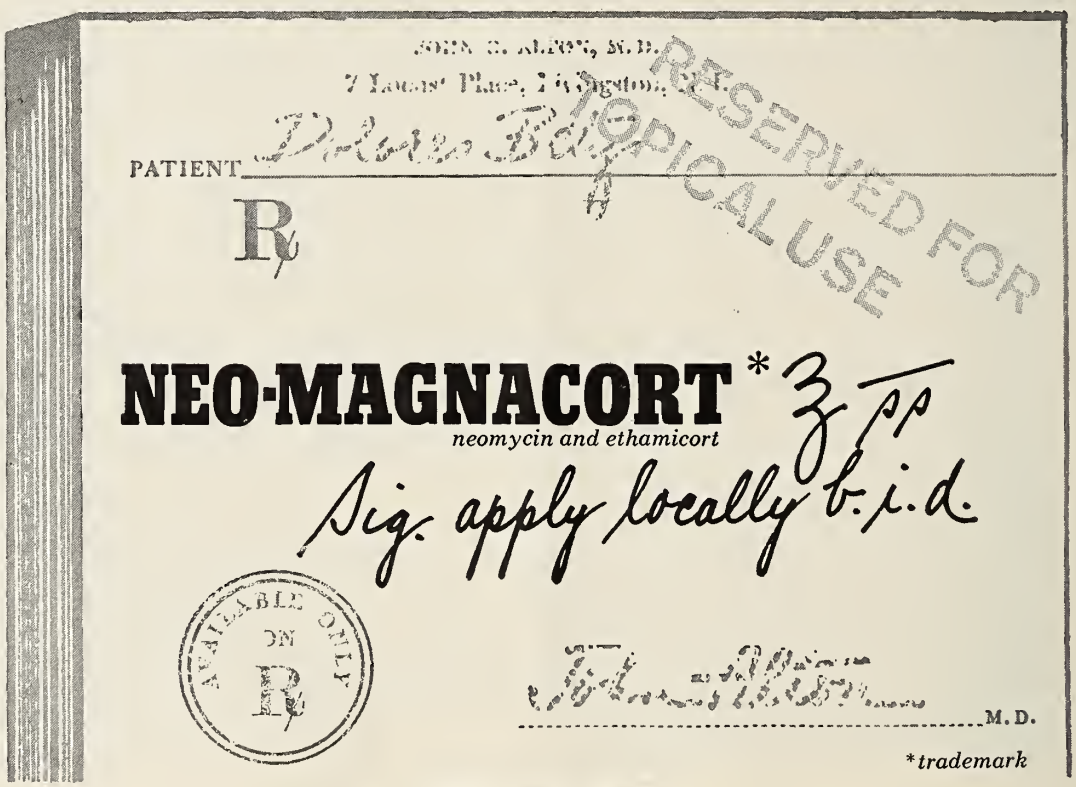

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promptly controls coughs and clears obstructed air passages

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Phenylephrine hydrochloride	10 mg.
Prophenpyridamine maleate	12.5 mg.
Dihydrocodeinone bitartrate Warning: may be habit forming	1.66 mg.
Chloroform (approximately)	13.5 mg.
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(Alcohol content, 10%; sugar, 33⅓%)

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Pitman-Moore Company
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Role of Physicians in the Destiny of the Nation

(Continued from Page 39)

the most famous American physician and medical teacher of his generation. Dr. Rush was a rugged character, brash and bold in debate and in conduct. His correspondence was so indiscreet—he feuded violently with Washington, among others—that his family kept his private papers secret until recent years. He was a confidant of all the important men of his age in political life. It was to him that Jefferson wrote the famous line: "I have sworn upon the altar of God eternal hostility against every form of tyranny over the mind of man."

William Shippen of Pennsylvania, was a member of the Continental Congress and a dedicated physician all his life, one of the founders of the College of Philadelphia (later University of Pennsylvania) and of the College of New Jersey (later Princeton).

Samuel Holten of Massachusetts, a friend of the Revolution from the beginning, held many state posts, and was a member of Provincial Congress, of the Committee of Safety and at one time president pro tempore of Continental Congress; later a judge.

David Ramsey of South Carolina, where he moved from Philadelphia, was an Army surgeon during the Revolution. Captured at the fall of Charleston, he was imprisoned by British for 11 months. Later, a member of Continental Congress and at one time its President pro tempore, he instituted the first election contest ever filed before Congress.

John Condit of New Jersey, was twice appointed and twice elected to the U. S. Senate and several times elected to House. A founder and trustee of Orange Academy, he was an Army surgeon during the Revolution.

Samuel L. Mitchell of New York, served as Representative or Senator from 1800 to 1813. He was medical editor and professor of natural history and botany and materia medica in the New York College of Physicians and Surgeons.

Westel Willoughby, Jr., of New York, was state judge, member of state Assembly and president of Western New York College of Physicians and Surgeons. He was an Army surgeon (1812) before election to U. S. House. He founded the town of Willoughby, Ohio, and Willoughby College (now part of Syracuse University).

Royal S. Copeland of New York, perhaps best known of the modern physician-senators, entered political life as mayor of Ann Arbor, Mich., 1901-1903, and on moving to New York City, served as public health commissioner for five years. He was elected to the Senate in 1922 and served until his death in 1938.

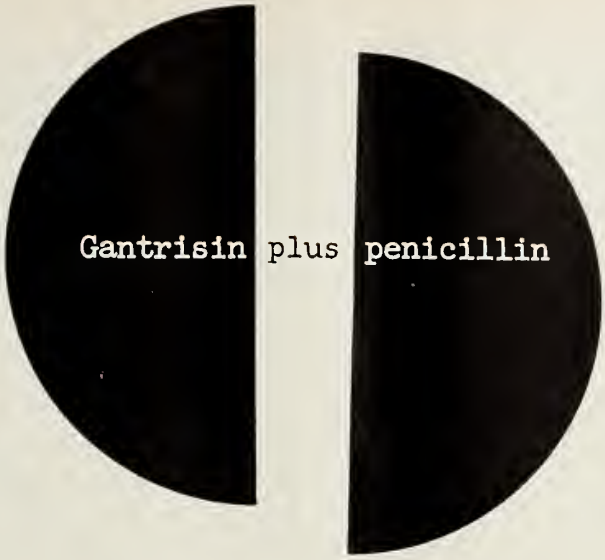
13 PHYSICIAN-CONGRESSMEN ALSO WERE GOVERNORS

Among the 359 doctors who have reached Congress, there are scores who, the records show, thrived

(Continued on Page 52)

broader recognition

HIGHER
BLOOD
LEVELS



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GANTRICILLIN (acetyl)-200. Each teaspoonful (5 cc) of the cherry-flavored suspension provides 0.5 Gm Gantrisin (acetyl) plus 200,000 units of crystalline penicillin G potassium.

(Continued from Page 47)

on political combat. All their lives they were active in state and local politics and government, as well as national. They were sheriffs, judges, state legislators, state and national committeemen. Records we have studied are evidence that at least 13 of these men—doctors elected to Washington—also became state or territorial governors at one time or another.

One of the most colorful must have been Dr. James W. Throckmorton of Texas, who served in the House of Representatives after the Civil War. He was elected governor of Texas without much trouble, but was thrown out of office on orders of General Sheridan.

Three states—Alabama, Delaware and Ohio—had doctors as their first governors. William W. Bidd was Alabama's first governor, before coming to Congress, where he served both in Senate and House. Likewise, Edward Tiffin was elected first governor of Ohio in 1803, following which he came to Washington as a U. S. Senator. Joshua Clayton, who had one term in the U. S. Senate at the end of the eighteenth century, was Delaware's first governor.

At least two physicians who served in Congress also have been territorial governors. Late in his career, William A. Newell was territorial governor of Washington, a job that could not have been a novelty to him as he had served as New Jersey's chief executive between two terms in the U. S. Senate in the mid-nineteenth century. Dr. Newell rounded off his career with an appointment as U. S. Indian Inspector, starting in 1884. During the Civil War William Jayne was Dakota Territory governor after sitting two years in the U. S. House as a non-voting delegate.

Other physician-governors who spent some time in the U. S. House or Senate: John Osborne, Wyoming governor 1893-95; William Harrison Bissel, Illinois, mid-nineteenth century; Alexander M. Dockery, Missouri's governor at end of nineteenth century; William Eustis, who served as U. S. Minister to the Netherlands and Governor of Massachusetts after two terms in the House of Representatives; Joseph Kent, Maryland's governor between terms in U. S. House and Senate; and Drs. Hall of Georgia and Wolcott of Connecticut, mentioned earlier as signers of the Declaration of Independence.

SCORES OF PHYSICIAN-CONGRESSMEN ALSO LED TROOPS IN BATTLE

When the country was young and bursting at its seams, doctors like others moved from one profes-

(Continued on Page 58)

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Role of Physicians in the Destiny of the Nation

(Continued from Page 52)

sion or business to another rather freely—medicine to law to agriculture then perhaps back to medicine. But among doctors in national politics, the most popular transition was from medicine to military duty as line officers, then back again to medicine. This tendency was pronounced during the Revolutionary War, continued through the War of 1812, and was not unusual in the Civil War. even though by that time there was a national awareness of the great value of military surgeons.

Henry M. Shaw of North Carolina, served two terms in the U. S. House of Representatives before the Civil War. But when the fighting started he showed up as a line colonel in the Confederate Army and was killed in action near New Bern, N. C.

Similar to his career was that of a contemporary, Graham Fitch of Indiana, who raised a regiment of volunteers for the North and led the men as colonel

(Continued on Page 60)

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BRAND OF MERALLURIDE INJECTION

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Role of Physicians in the Destiny of the Nation

(Continued from Page 58)

until wounds forced his retirement. A younger doctor in Virginia, Robert E. Withers, followed the same course; a major of infantry, then colonel, finally discharged "in consequence of numerous disabling wounds." After the war he served in the Senate, founded the Lynchburg, Va., *News*, was named consul at Hong Kong.

A generation earlier Solon Borland of Arkansas had done the same thing—practiced medicine until the fighting started in Mexican and Civil Wars, then led troops in battle. His Senate service came between the wars. Similarly John Bratton of South Carolina preferred fighting to doctoring; like Dr. Borland he had the rank of line brigadier general in the Confederate Army. He was a U. S. Senator after the reconstruction period.

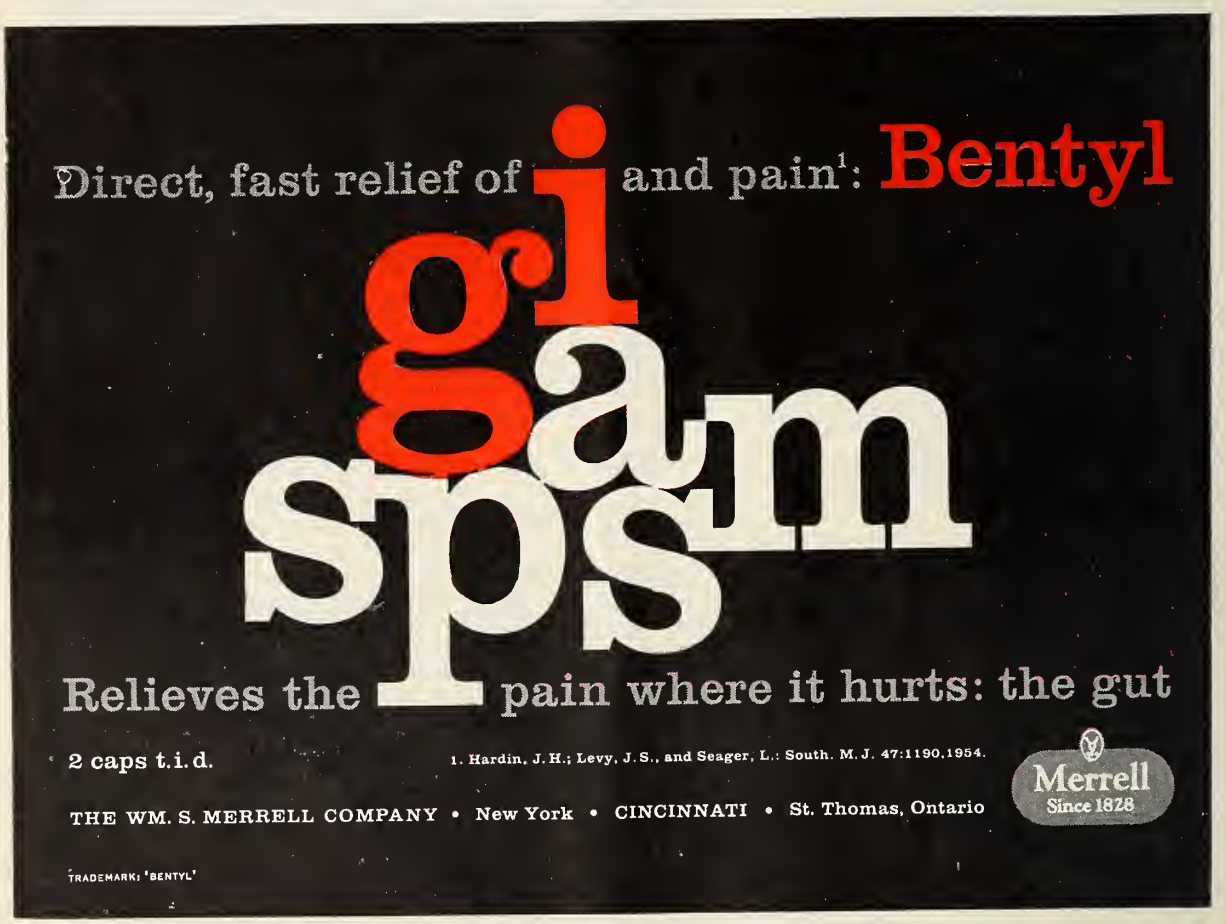
In view of these cases, it is not unusual that two physicians who served in Congress also were selected as Secretary of War. One was Henry Dearborn of Massachusetts, line officer in the Revolutionary War, secretary of war for eight years under Washington, member of Congress, then senior major general in command of troops in the War of 1812. An earlier Secretary of War for Washington was James McHenry of Maryland, whose Revolutionary War record shows him as surgeon, secretary to Washington, member of Lafayette's staff. He had sat in the Continental Congress.

THEY WERE LAWYERS, BOTANISTS, ASTRONOMERS, DIPLOMATS, PREACHERS

In addition to sitting in the U. S. Congress, doctors had the enthusiasm and capacity for many other activities, some unusual. They are not easy to catalog. Following are a few words about more of them. Unless otherwise indicated, their Congressional service was in the House of Representatives and during the years shown in parentheses:

John Archer of Maryland (1801-09) received the first medical degree issued on the American continent. . . . Several combined preaching or theology with medicine—John Bull of Missouri (1833-35), Oliver Cromwell Comstock of New York (1813-19), Luther Jewett of Vermont (1815-17), Hugh Williamson of North Carolina (1789-93), and Manasseh Cutler of Massachusetts (1801-05). Dr. Cutler also had the time to be a lawyer, botanist and astronomer. . . . John S. Harrison of Ohio (1853-59) had as good a claim on the White House as a man could get without being elected to it: He was the son of one President and the father of another. The first President Harrison, incidentally, studied medicine

(Continued in Back Advertising Section Page 82)



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Repair of Intracardiac Defects

Operation Under Direct Vision with the Aid of Hypothermia or a Pump-Oxygenator; Report of Twelve Cases

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• **The repair of intracardiac defects under direct vision by opening the heart to expose the operative field, with the aid of hypothermia or a pump-oxygenator, is now a practical clinical method. Twelve patients were operated upon by this method. In eight patients an atrial septal defect was repaired during total circulatory occlusion under hypothermia. The seven patients in this group who had uncomplicated atrial defects survived the operation and are doing well after a short follow-up period. One patient with an unrecognized, associated ventricular defect died at the time of operation.**

Four patients were operated upon during total cardiac by-pass with the DeWall bubble-oxygenator. The first three patients survived operation and are continuing to do well after a brief follow-up period. In the fourth patient an atrioventricularis communis was repaired by the reconstruction of an atrial and ventricular septum with a plastic prosthesis. This patient died at the end of operation.

THE SURGICAL treatment of congenital heart disease has been limited by the fact that the surgeon has been unable to operate under direct vision on the structures within the heart. Cardiac operations in the past have been restricted to indirect procedures on the great vessels or to "blind" instrumentation performed through the walls of the heart. The development of techniques for open cardiotomy has made possible the surgical correction of previously inoperable congenital defects. The purpose of this discussion is to present the initial results with open cardiotomy performed with the aid of hypothermia or a pump-oxygenator in 12 patients.

The investigators currently working in the field of extracorporeal circulation owe much to the fundamental studies performed over the last 17 years by Gibbon and co-workers.[6-9, 16] The clinical application of pump-oxygenators has been reported by Gibbon,[10] Dodrill[5] and Dennis and co-workers.[3] During this developmental period Lillehei and co-workers[12] reported extensive clinical experience with the donor circulation method. Swan and Zeavin[17] successfully employed circulatory interruption under hypothermia in a large series of cases. In recent months, open operations on the heart with the aid of cardiac by-pass utilizing a pump-oxygenator have been placed on a practical clinical basis by Lillehei and co-workers[14] and by Kirklin and associates.[11]

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The construction of the pump-oxygenator was made possible through the generous help of the Valley Heart Fund. The investigative studies preliminary to the use of open cardiac surgery were supported by grant-in-aid H-882, United States Public Health Service.

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EXPERIMENTAL STUDIES

Profiting by the reports of other groups of investigators, the authors began a study of the recognized techniques of cardiac by-pass. Animals were studied during cardiac by-pass employing either a perfusion reservoir,[13] a biological oxygenator employing homologous lungs[13] or the DeWall oxygenator.[4,14] Extensive studies with open cardiotomy during circulatory interruption under hypothermia were also performed. Biochemical, physiologic and survival data were accumulated with each of these methods. A definite evaluation of the relative merits of the various methods is not pertinent to the present discussion. Two of the methods, however, appeared sufficiently satisfactory under experimental conditions to warrant their application to man. The clinical experience to be reported here is concerned with the use of hypothermia and the DeWall oxygenator.

HYPOTHERMIA

The experience with the closure of atrial septal defects in this clinic in 34 patients has been reported.[15] There were two deaths in this series and the last 25 patients were operated upon without mortality. Complete closure of the defects, however, was not achieved in all the cases because of the size, location or multiplicity of defects. For this reason, attention was directed to the direct method of closure with circulation occluded.

Eight patients were operated upon with the following technique. After the induction of anesthesia, body cooling to 25°C. to 28°C. was achieved by application of ice packs. The patient was then prepared for bilateral anterior thoracotomy. The right hemithorax was opened, and an exploration of the right auricle was carried out by inserting the index finger through the right atrial appendage. In the past if the defect was small and suitably located, closure by atrioseptopexy was done.[1,2] If it appeared that the defect could not be completely closed by this method, the circulation was interrupted and the defect was closed under direct vision.

Currently, an open method of repair is preferred. After closure of the incision in the heart and reestablishment of circulation, cardiac massage is employed if spontaneous myocardial contractions are judged to be inadequate. If ventricular fibrillation occurs, defibrillation by electric shock is performed after a period of vigorous cardiac massage.

Seven of the patients were found to have uncomplicated atrial defects. All recovered satisfactorily and were discharged from the hospital in the second postoperative week. In one patient who had a 10-minute period of circulatory interruption, there was a suggestion of disturbed sensorium for a period of several hours following operation. The remainder of the postoperative course was uncomplicated.

The operative procedure in the eighth case proceeded in the usual manner until the circulation was restored. Despite the fact that circulatory interruption lasted only 3 minutes and 25 seconds, recovery of cardiac action was slow. Cyanosis of the myocardium and poor muscle tone suggested inadequate coronary flow. After a prolonged attempt at resuscitation, the patient died. Autopsy showed satisfactory closure of the septal defect, but there was a large associated interventricular defect. It was apparent that resuscitation was unsuccessful because the left ventricular output was shunted through the interventricular defect into the low resistance pulmonary circulation, thus producing inadequate systemic and coronary flow.

During the performance of these operations by the open technique, the disadvantages of the closed, or "blind," methods became obvious. In three of the patients, the interatrial defect extended from 1.0 to 1.5 cm. below the orifice of the inferior vena cava. Even under direct vision, considerable difficulty was encountered in closing the inferior portion of the defect which was located on the posterior wall of the vena cava. An attempt to close these defects by atrioseptopexy would have resulted either in incomplete closure or the inadvertent shunting of blood from the inferior vena cava into the left auricle (see Case 2).

The closure of atrial defects under hypothermia is not without disadvantages. Complete circulatory stasis under hypothermia with elimination of coronary perfusion may bring about poor myocardial tone and ventricular fibrillation. Although all seven of the patients with uncomplicated atrial defect were resuscitated satisfactorily, arrhythmia and poor cardiac action were a constant source of concern. Another distinct disadvantage lies in the fact that it is unsafe to interrupt circulation for longer than ten minutes. The case of a two-year-old girl with the clinical and laboratory findings characteristic of atrial septal defect illustrates this point well. On exploratory myocardotomy, the patient was found to have a defect of ostium primum type. In the judgment of the surgeon, the defect could not be closed by direct suture because of its large size and because of the danger of damaging the function of the tricuspid and mitral valves. A plastic prosthesis of Ivalon sponge was available, but it was estimated that inserting it would require occlusion of the circulation for more than ten minutes. Definitive treatment of the atrial defect was deferred, therefore, until operation with an extracorporeal pump-oxygenator could be performed.

PUMP-OXYGENATOR

Four patients were operated upon with the heart open and total cardiac by-pass carried out with the

DeWall pump-oxygenator. Use of this apparatus has previously been described by Lillehei and associates.[14] The essential parts of the device consist of (1) two catheters draining superior and inferior vena cavae, (2) a venous reservoir, (3) a venous pump, (4) an oxygen dispersion unit, (5) a defoaming unit,† and (6) an arterial reservoir. From this reservoir oxygenated blood is pumped through a filter and bubble trap to the patient by way of an arterial cannula in the left subclavian artery.

All portions of the device in contact with blood are made of vinylplastic* or nonreactive metal. Propulsion of the blood is accomplished with two independently operating sine wave pumps powered by electric motors and controlled by a variable speed gear box.‡ The filter and bubble trap is constructed of block lucite and contains a stainless steel filter screen.

The pump-oxygenator is prepared for use by priming with 1,000 cc. of freshly-drawn, heparinized, arterialized blood. A mixture of 95 per cent O_2 and 5 per cent CO_2 is used in the dispersion chamber. The gas is partially humidified.

After the usual preanesthetic medication, the patient is anesthetized with cyclopropane. The chest is prepared and draped for bilateral, anterior thoracotomy through the fourth interspace. Multichannel recording oscillographs are used to make continuous tracings of arterial pressure (right ulnar artery), electrocardiogram, electroencephalogram and body temperature. Cathode-ray oscilloscopes are used to monitor the electrocardiogram and electroencephalogram during the operation. The anesthesiologist and operating team, therefore, have within sight at all times evidence of myocardial and cerebral function. Medications and blood replacement are given through the long saphenous vein.

The thorax and pericardium are then opened. The auricular septum is explored with a finger inserted through the right auricular appendage to rule out any unsuspected, associated auricular defect. The left subclavian artery is then occluded at the aorta, ligated distally, and divided. An arterial cannula of appropriate size is tied in place in this artery, and the patient is thereby connected to the arterial side of the pump-oxygenator. The vena cavae are isolated, and a catheter is inserted in each vessel through separate stab wounds in the right atrial wall. Just prior to the insertion of the venous catheters, the patient is given a single intravenous dose of heparin (1.5 mg. per kilogram of body weight). The vena cavae are occluded, and the previously calibrated pump is started with a delivery rate of 30 ml. to 40 ml. per kilogram of body weight per minute. Cardiotomy is then performed and the defect repaired under direct vision. The myocardial wall is closed with two continuous layers of 0000 artificial silk. The vena cavae are released and the pump-oxygenator discontinued. At this time protamine is given in a dosage of 2.0 mg. per kilogram of body weight. At the termination of the procedure the patient is reweighed. Changes in weight are considered to reflect changes in blood volume, and this information is used as a guide for restoring normal blood volume.

†The defoaming agent (Antifoam-A) was generously supplied by the Dow Corning Corp., Midland, Michigan.

*Mayon Plastics, 781 N. Washington, Minneapolis, Minnesota.

‡Sigma Motor, Inc., Middleport, New York.

CASE REPORTS

Case 1. The patient, a ten-month-old, white, mongoloid girl, weighing 6.5 kilograms, had been repeatedly hospitalized for respiratory infections and pneumonia. A diagnosis of acyanotic, congenital heart disease was made at the age of two months. Radiographs showed cardiomegaly and pulmonary congestion. Electrocardiograms indicated right ventricular hypertrophy. Cardiac catheterization showed an increase in oxygen saturation of blood in the right ventricle and in the pulmonary artery suggestive of interventricular defect or patent ductus arteriosus.

A bilateral transsternal thoracotomy in the fourth interspace was performed. When the right atrium was explored digitally there was some question as to whether there might be a fenestrated auricular septal defect. Total cardiac by-pass was carried out for a period of 18 minutes while right ventriculotomy was performed. No ventricular defect was found, but it was possible to visualize and suture a fenestrated atrial defect by working through the tricuspid valve. The fenestrated nature of the lesion explained why it had not been palpable with certainty on the auricular exploration. The patient recovered without difficulty and was discharged on the sixteenth postoperative day.

Case 2. The patient, a six-year-old white boy weighing 20 kilograms, had been admitted to another hospital in November, 1954, with a history of retarded physical development, frequent respiratory infections, easy fatigability and cyanosis on exertion. He entered this hospital in July, 1955, and was found to have a Grade III systolic murmur, loudest at the apex, and pronounced accentuation of the pulmonary second sound. Radiographs showed pulmonary vascular engorgement. Right axis deviation and right ventricular hypertrophy were indicated by electrocardiogram tracings. Upon cardiac catheterization the findings were characteristic of atrial septal defect.

On August 11, 1955, atrioseptopexy was performed. The symptoms persisted and the patient became more cyanotic during the seven months after operation. It was considered likely that the attempt to repair the low-lying atrial defect by the atrioseptopexy method had resulted in diverting the inferior vena caval flow into the left auricle, hence the increased cyanosis.

The patient was readmitted to the hospital, and on March 21, 1956, he was prepared for operation under hypothermia, and for cardiac by-pass if necessary. Bilateral thoracotomy revealed the previously unrecognized fact that the superior pulmonary vein on the left side was anomalous and emptied into the innominate vein. The anomalous pulmonary vein was transected and anastomosed to the left auricular appendage. The left inferior pulmonary vein passed posterior to the heart and appeared to join the inferior vena cava just below its junction with the right auricle. Because the previously performed atrioseptopexy would complicate the attempt to repair the atrial defect, it was decided that hypothermia would not permit adequate operating time within the heart. The pump-oxygenator, therefore, was employed to perform cardiac by-pass for a period of ten minutes. The atrioseptopexy was found to have shunted a portion of the inferior vena caval flow into the left auricle. The septal defect extended 1.5 cm. inferiorly into the vena cava, and it was apparent that satisfactory repair of this lesion could not have been done without opening the area to view. The atrioseptopexy was taken down and the atrial defect closed by direct suture.

The postoperative course was complicated by respiratory deficiency and two episodes of cardiac failure. On the third postoperative day, tracheotomy was performed to permit endotracheal suction. The patient slowly improved and was discharged after one month in the hospital.

Case 3. The patient was a ten-month-old, white boy who weighed 5.8 kilograms. There was a history of poor weight gain, of cardiomegaly and of a heart murmur since the age of three months. Cardiac catheterization and angiograms gave findings indicative of a ventricular septal defect. Radiographs showed increased pulmonary vascularity, and an electrocardiogram was characteristic of left ventricular hypertrophy.

A total cardiac by-pass was performed for a period of 13 minutes and 45 seconds. Under direct vision a suture repair of a high interventricular septal defect was carried out through a right ventriculotomy. The postoperative course was benign, and the patient was discharged on the 20th postoperative day.

Case 4. The patient was a seven-month-old, white boy weighing 5 kilograms, who had had repeated episodes of cardiac failure. Cardiac catheterization was carried out at another hospital when the patient was four months old and again at the age of seven months at this hospital. The findings on both occasions suggested the presence of an atrioventricularis communis. The patient did poorly despite continuous hospitalization at this and other hospitals. After a period of one month of observation, it was elected to attempt a repair of the atrioventricularis communis under total cardiac by-pass.

On April 11, 1956, operation was performed. During exploration, cardiac arrest occurred. Following resuscitation of the heart, it was debated whether the procedure should be continued. In view of the poor prognosis without operation, it was elected to attempt repair with the pump-oxygenator. The diagnosis of atrioventricularis communis was confirmed, the defect consisting of the absence of the lower part of the atrial septum and a major part of the ventricular septum. The remnant of the ventricular septum was so small that there was, in essence, a single ventricle. Cardiac by-pass was maintained for 37 minutes. The remaining portion of the atrial septum was pulled down between the two atrioventricular valves, and the remainder of the defect was closed with a circular disc of Ivalon sponge 2.0 cm. in diameter and 0.3 cm. in thickness. The procedure was technically satisfactory. After closure of the ventricle, the heart responded poorly. Periods of second and third degree heart block alternated. It was noted that with cardiac massage it was impossible to get a directly measured systolic arterial pulse of greater than 40 mm. of mercury. The patient died after prolonged resuscitative effort.

At autopsy examination there was at least one obvious reason for the patient's death. Although the surgical procedure resulted in the creation of two ventricular chambers, this division was functionally inadequate. The pronounced right ventricular hypertrophy and dilatation characteristic of atrioventricularis communis were easily demonstrable. The estimated volume of the right ventricular chamber was 30 cc. and that of the left ventricular chamber was 8 cc. It was apparent that before the closure of the ventricular defect the right ventricle had been playing a large role in maintaining the systemic circulation. The fact that the left ventricle had a volume of only a few milliliters may explain why cardiac massage could not be made to produce a systolic pressure of greater than 40 mm. of mercury.

DISCUSSION

At present the indications for the use of cardiac operations in which the operative field is exposed to view are not well defined, since it is not possible to compare the mortality of the operative procedure with the mortality resulting from the natural history of the disease being treated. It is quite possible, however, that as the operations of exposure become safer, operations which are now performed by the closed or "blind" methods may be carried out more effectively and with equal safety. On the basis of the authors' experience with exposed heart operations in the treatment of atrial defects, it is possible to draw one definitive conclusion: Not all atrial defects, particularly those located at and below the orifice of the inferior vena cava and those of the ostium primum type, can be repaired satisfactorily by the closed methods now available. Even open operation under hypothermia is not always ideal, since it does not give adequate time to insert plastic prostheses

when they are required. For this reason, when pump-oxygenators are further refined, total by-pass may become the method of choice for repair of these atrial lesions.

The present policy of the authors concerning the surgical treatment of ventricular septal defect is one of cautious conservatism. It is well known that many of these defects are compatible with a long and healthy life. The prognosis appears to depend chiefly upon the size of the defect and the individual's response to a prolonged increase in pulmonary blood flow. This increase which is characteristic of ventricular septal defect eventually produces pathologic changes in the pulmonary vasculature and severe pulmonary hypertension. When pulmonary vascular resistance becomes sufficiently elevated, the shunt through the ventricular defect reverses and the patient becomes cyanotic.

It is already well recognized that patients in whom reversed shunts develop through communications between the right and left sides of the heart or great vessels have a poor prognosis. It is essential, therefore, that patients with ventricular septal defect be operated upon before severe hypertension occurs. Our present policy is to consider for operation only those patients who have repeated episodes of cardiac failure and a moderate to severe degree of pulmonary hypertension, and who do not respond satisfactorily to a medical program. Since rapid progress is being made in operations with pump-oxygenators used to maintain circulation, it seems likely that the operative mortality will decrease over the next year or two. Any patient, therefore, on whom operation can be postponed without jeopardy will do well to wait. The four patients reported upon herein were chosen for operation because it was believed they could not live long enough to benefit from any technical advances that might be made in pump-oxygenators. Patients should always be selected for operation with caution, but all of them should have the benefit of a thorough diagnostic evaluation in the hope that their lesions are such that operation can help.

In addition to ventricular defects, there are a number of other lesions that may eventually be treated best by open cardiotomy with the pump-oxygenator. Ostium primum defects, atrioventricularis communis, single ventricle, and transposition of the great vessels are examples of such anomalies.

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Radiation of Pelvic Malignant Disease

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• **At present, progress in the treatment of cancer consists of more extensive excision or more thorough irradiation.**

The cure rate of pelvic cancer is proportionate not so much with the form of therapy used as with the stage of the disease when first diagnosed.

Any woman who consults a physician should have a pelvic examination regardless of the presence or absence of pelvic symptoms.

In considering any such topic as the radiation therapy of pelvic malignant disease, it is well to start by acknowledging two facts: First, that the therapeutic use of irradiation is still involved in the management of the overwhelming majority of pelvic malignant lesions and, second, that the age of the isotope is permanently with us from the point of view of therapy. The conclusion from these two premises is that we have been thrust into the position of having a considerable number of new agents and modalities with which we must, of necessity, become acquainted from the point of view of their limitations and potentialities. Our situation is not unlike that of the internist who originally had only regular insulin available for diabetic patients, and suddenly acquired protomine zinc insulin and a wide variety of other therapeutic weapons. Each of these had in common the ability to control the blood sugar, yet each has distinct differences, and various combinations of the available agents are indicated for various individual patients.

Many of the new sources of irradiation cannot as yet be judged from the point of view of their final results. Actually, however, there is no great reason at present to assume that the new sources of irradiation will significantly alter the cure rate. To return to the analogy with the newer forms of insulin, no more diabetic persons have had the disease controlled, although the control has been rendered simpler, safer and more precise. Accordingly, in the present discussion it is proposed to consider potentialities and indications rather than to present any detailed survey meticulously comparing five-year cure rates.

CARCINOMA OF THE CERVIX

It remains true that the revival of interest in the surgical attack on carcinoma of the cervix has brought about a salvage rate equal to but no better than that achieved with irradiation therapy in comparable cases. The primary surgical attack, furthermore, is limited to League of Nations Stage I lesions and in most clinics only to a selected group of such patients. This leaves the majority of patients with carcinoma of the cervix that was invasive when first diagnosed committed to irradiation. The objectives of such therapy are to produce an even blanket of irradiation across the pelvis, achieving a cancerocidal dose at all points. It is of importance to restate this objective only because over the years there has so often been a tendency to slip into the habit of administering intensive irradiation to the cervix and the immediate paracervical region, and to administer inadequate therapy to the lateral pelvic walls. The lateral wall is the first site of spread of cervical carcinoma, and cervical carcinoma is a lesion that is always further ahead of us than we think. Individual modalities of treatment are less important than this over-all objective of cancerocidal doses at all points; and against this objective each technique should be evaluated.

The weapons available include first of all x-ray for external therapy, and here the pattern of our thinking has been changed most significantly by the introduction of the supervoltage forms—the two million volt tube or the Van der Graf accelerator. There can be little doubt, reviewing the preliminary reports of the results of such therapy in gynecologic malignant disease, that the skin-sparing action associated with the increased voltage levels is a definite benefit. At present in the gynecologic clinic of Western Reserve University School of Medicine, external therapy which formerly delivered between 3,500 and 4,000 roentgens to the midpelvic plane is now delivering between 4,500 and 5,000 roentgens uniformly across the midpelvis. It must be acknowledged, however, that this skin-sparing benefit is perhaps less impressive with regard to the pelvic lesions than in those of the chest or neck, for as the dosage to the midpelvic level increases, the morbidity in the other pelvic viscera likewise increases. In patients observed by the author, bowel morbidity has been the most conspicuous change and has shown an increase of at least 25 per cent with the increased dosage level. In place of the top limitation imposed by skin tolerance, top limitation imposed by

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the patients' general systemic tolerance and by the local bowel reactions to these dosages are now not infrequently encountered.

The ability to increase the dosage to the side wall by 1,000 to 1,500 roentgens, however, has sharply limited the need for the other techniques which have been employed to raise the dosage in the nodal region. Thus the interstitial colloidal gold sponsored by Sherman and the nylon thread technique for the use of cobalt are perhaps less necessary with the approach to therapy available.

Radium

Radium remains the standby for central pelvic therapy and for achieving the high dosages to the cervix itself and to Point A. There has undoubtedly been a rise in recent years in the interstitial use of radium, and modifications of the Corscaden pattern are frequent. Much of this has been achieved by a reduction of the intensity of the individual sources, thus reducing the immediate reaction and necrosis around each needle, while relying on the crossfire of the various needles to create a field of adequate intensity within the fire pattern. In such circumstances the dosage delivered to the neighboring structures falls off sharply outside the pattern.

Cobalt

$Cobalt^{60}$ as a therapeutic weapon is undoubtedly here to stay in one form or another. It has a half life of 5.3 years and emits two gamma rays of 1.1 and 1.4 million electron volts intensity. It has an exceedingly weak beta ray, and heavy shielding to guard against beta-ray damage is not necessary. It is insoluble and inert if it should come in contact with body fluid or tissues, it can be activated in any desired shape, and it remains relatively inexpensive.

Radioactive cobalt has found its principal therapeutic application in two quite distinct forms. The first of these is the cobalt bomb—a mass of activated cobalt held in a special unit which directs the beam of the gamma rays much as x-rays would be directed from a therapy machine. In this form cobalt is used as a substitute for x-ray and studies of its gamma ray strength as compared to the output of a two million volt x-ray tube would indicate that the two are approximately equivalent. In other words the cobalt bomb can be considered as the roentgenologic equivalent of a supervoltage x-ray machine of a two million volt equivalent dosage level. It will have all of the drawbacks of external supervoltage and all of the advantages of such therapy. It will need periodic reactivation and has the technical disadvantage that it is emitting its beam all the time, whereas the x-ray tube is emitting its beam only when it is turned on.

$Cobalt^{60}$ has also been used as a radium substitute in various modalities for transvaginal application. When it is used in this way, the particularly attractive features are the ease in handling it and the lack of necessity for heavy filtration to remove the beta ray. Gone is the concept of the platinum and gold filters necessary with radium; containers of extraordinary fineness can be employed. Not only has it been used in colpostat and tandem therefore, but, with the advantage of these characteristics, has received considerable attention for various forms of interstitial therapy. The light aluminum needle which can be trimmed in length to suit the needs of the pelvis and the tumor distribution; the steel needle which in bulk is considerably smaller than the equivalent radiation strength of radium, or even the encasement of the cobalt portions in nylon tubing to be sewn into the tumor—these are examples of advantages in interstitial therapy.

Gold

Au^{198} has properties that are quite distinct from cobalt. It has a half life of only 2.7 days, which immediately complicates the problem of getting the irradiated material from the reactor to the patient without loss of too much strength. For an institution to "keep gold on hand" in the same way that it can keep cobalt readily available is virtually impossible, since at the end of a week to ten days the strength of any given lot, so far as effectiveness is concerned, is completely gone. Radioactive gold emits but one gamma ray which is of a low degree of penetrability, and a beta ray with a high electron voltage spectrum. In its colloidal form it is relatively easily handled, it is inert in the body tissues, is insoluble, and can be activated in considerable quantities without significant cost.

Sherman and co-workers suggested the direct injection of Au^{198} into the paracervical regions for treatment of cervical carcinoma. The colloidal particles are picked up by the lymphatic chains of the area and carried to the lateral pelvic walls, where the nodes concentrate the multiple sources of irradiation. That it can effectively alter the nodes morphologically has been demonstrated, but it still remains true that the physics of this type of therapy is of necessity approximate. With the half life declining rapidly as the sources of irradiation move toward their ultimate goal, and with the tissue volume being treated not completely known, any calculation of tissue roentgens delivered must be at best an educated guess. These difficulties may well be overcome, but at present the interstitial injection of radioactive colloidal gold in the therapy of carcinoma of the cervix remains a matter for study rather than for wide application.

CARCINOMA OF THE FUNDUS AND CORPUS OF THE UTERUS

In sharp contrast to the situation with carcinoma of the cervix, the primary attack on fundal carci-

noma remains surgical. Radiation therapy finds its place either for therapy of inoperable lesions where a full course treatment must be given around the pelvis and within the uterus, or as a preliminary to hysterectomy. The motives for such presurgical treatment by intercavitary irradiation are not always easy to define. Since the tumor can implant by direct seeding, probably the greatest benefit that is achieved by pretreatment with sources of radiation is to render the malignant cells temporarily incapable of such implantation and thereby reduce the risk of local seeding at the time of hysterectomy.

It is important to define the motive for this presurgical radiation therapy because it will influence both the dosage schedules and the forms of therapy employed. If the foregoing statement of motives is an accurate postulation of the reasoning behind the prehysterectomy therapy with intercavitary irradiation, then it should be possible to reduce the dosages significantly provided radiation is distributed uniformly within the uterus. Thus, Kotmeyer advocated a considerably smaller dosage of irradiation for fundal carcinoma than that customarily used in this country, and it is probable that delivering 1.200 roentgens at 0.5 cm. distance beneath the endometrial surface should be sufficient to achieve such an objective. The one prerequisite for such a dosage schedule would be a uniform application of the irradiation throughout the uterine cavity, and this can be achieved only by multiple sources packed within the uterus. The traditional application of a tandem of radium for a given number of "milligram hours" leads to local areas of sharp overdosage and other areas of pronounced undertreatment. Undoubtedly in some areas of the uterine cavity the desideratum of rendering the cells at least sick enough that they will not implant readily is more than successfully achieved, whereas in other areas the dosage is woefully inadequate for such a purpose.

In this connection Hendricks suggested the use of multiple cobalt sources in the form of beads which are strung together for packing into the uterine cavity. These can follow the contours of the most irregular uterus, giving an even field of irradiation over the entire endometrial surface. By using an inactive chain for preliminary packing and measurement of the capacity of the uterus, the total length of time that the operative team is exposed to irradiation is considerably reduced and this technique should improve the multiple source therapy of fundal carcinoma prior to hysterectomy.

CARCINOMA OF THE OVARY

Radiation therapy has no actual or logical place in the primary treatment of carcinoma of the ovary. It remains tragically true, however, that in so many cases ovarian carcinoma has already penetrated the capsule of the tumor and implanted metastatically on the peritoneal surfaces at the time of the primary surgical attack that palliative irradiation remains necessary for the ultimate management of the patient. Since the area involved is so great, external sources of radiation—either from x-ray tube or from the cobalt bomb—usually render the patient exceedingly ill systemically without being able to achieve a cancerocidal dose at the midabdominal plane. For this reason, many efforts have been made to find a substitute for external x-ray therapy of metastatic ovarian carcinoma.

The intraperitoneal administration of radioactive colloidal gold is one of the best known of these attempts to palliate patients who have ascites and multiple peritoneal implants. It must be borne in mind that in these circumstances gold is not employed for its gamma ray therapy. Actually, the penetrability of the gamma ray is such that when the solution bathes the outside of the intestinal tract there are no evidences of mucosal burns inside the tract. With such minimal penetrability for the gamma rays (actually about 0.4 mm.) delivery of a cancerocidal dose of gamma roentgens into tumor nodules of any size cannot be expected. Actually, of course, in such a situation colloidal gold is being employed for its beta ray therapy. The strong beta ray burns the peritoneal surface, sclerosing it and reducing its ability to form ascitic fluid. This is palliation in its purest sense, but not to any degree therapy. The tumor continues to grow unabated and uncontrolled.

It would seem sensible, if the purpose of the gold here is to use its beta ray, to employ a pure beta emitter so that the gamma ray would present no problem at all. For this reason P_{32} was suggested, and experiments were carried out with chromic phosphate. In a few cases in which it was possible to obtain nodes from patients who had received this material intraperitoneally, however, as much as 20 per cent was accounted for outside the peritoneal cavity in nodal tissue or in bone, indicating some breakdown of the material.

It is impossible to conclude such a topic as this without two important reminders:

In the first place the topic of discussion here is new modalities in the treatment of gynecologic malignant disease, and it is well to remember that progress in treatment has nothing to do with progress in approaching the cure of cancer. At present, progress in the treatment of carcinoma consists of cutting it out more extensively or burning it more thoroughly. Neither of these implies, in any sense curative measures; and the cure of carcinoma will,

in all probability, be biochemical rather than radiologic.

The second point is, of course, that the cure rate of all of the lesions mentioned is, in the last analysis, proportionate not so much to the form of therapy employed as to the stage of the disease process when it is first diagnosed. The best means of radiologic treatment and the most skillful roentgen therapist remain earthbound by the clinical stage which the neoplasm has reached at the time treatment is started. To have any significant impact upon the national salvage rate for the gynecologic malignant diseases, we must diagnose them earlier. This means, for physicians, a high index of suspicion, an intelligent use of the diagnostic aids which are currently available and an increasing practice of prophylactic gynecology. No therapy is any better than the diagnosis that precedes it, just as no diagnostic aid has been invented for the patient who stays at home. From the point of view of the physician, it is impossible to discharge a woman from one's practice; she must be given not a dismissal, but rather a return appointment.

Finally, the presence or absence of pelvic symptoms should have nothing to do with determining which patient should have a pelvic examination. If the patient has a pelvis and reaches the office, she should have a pelvic examination. This should be a universal rule—even if it subsequently turns out that she has come only to collect money for the Community Chest.

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Intervertebral Disc Lesions

Surgical Treatment, End Results, Disability Ratings and Cost in Industrial Accident Injuries

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• **In lumbar intervertebral disc operations there is sometimes pronounced disparity between the clinical results and the results as reflected in the disability rating given by the Industrial Accident Commission. It is believed that the difference must be due to excessive complaining and exaggeration on the part of the claimant and his representative before the Commission, and that undue credence and importance are given to these subjective symptoms as compared with the objective findings as reported by the surgeon or clinician. Data in the present study indicate that the belief that surgical decompression of a single nerve root and removal of an injured or degenerated disc necessarily entails a certain degree of disability is not justified. Satisfactory clinical results were obtained in 93 per cent of compensation cases, but when settled or rated by the Industrial Accident Commission, only 59 per cent were closed as having good or excellent results.**

THE INCREASING ATTENTION given in recent years to the question of insurance coverage for the expenses of sickness has caused the public and insurance companies to be more conscious of the cost of medical care. Hence, physicians are coming to consider medical services not only in relation to personal income but also from the standpoint of cost to insurance carriers, particularly in industrial accident injuries.

The symposium on intervertebral disc lesions here presented was suggested by a growing reluctance on the part of insurance carriers to accept liability for patients with intervertebral disc injuries or to authorize operative treatment. Particularly impressive is a contention by claim insurance carriers that operations for disc lesions resulted in a permanent disability of at least 25 per cent and that their average cost per case ran into several thousands of dollars, even though from a clinical evaluation excellent or good results had been obtained. The willingness of insurance companies to settle a case before operation by compromise and release for from two to three thousand dollars impressed the author that their conclusions might be well founded. Yet this high disability rating seemed unreasonable in view of excellent and good clinical results obtained by the author in a neurosurgical practice dealing with both industrial and private patients. A review of the end results in a series of industrial patients personally operated upon was therefore undertaken to determine: First, what were the results in compensation cases based on clinical findings? Second, were the disability costs as high as the insurance carriers said they were? Third, if results were found satisfactory from a clinical point of view but were only fair or poor as rated for compensation purposes, then why the discrepancy?

This report is based upon the surgical treatment of intervertebral disc lesions in 497 patients in the years 1946 to 1952 inclusive. In 98 cases the patients were covered by compensation laws and the cases were ultimately closed as without disability, or were reviewed and rated by the Industrial Accident Commission of the State of California. Information on the final disability rating and the amount the insurance carrier paid for the partial or the total disability was obtained in 75 of the 98 cases. One insurance carrier reported on 34 cases, another on nine cases, a third on eight cases, and eleven other companies reported on from one to three cases each.

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RESULTS—CLINICAL AND INDUSTRIAL

The following evaluation has currently been accepted: "Excellent" indicates the patient is cured, has no symptoms, has returned to work, and is entirely satisfied: From an industrial standpoint, the patient has no disability and receives no monetary award. "Good" implies the patient has a satisfactory relief of symptoms, can do his usual work but may have mild backache for which he will occasionally stop and rest: From a rating standpoint he will be considered to have a 20 per cent disability or less, for which he will receive approximately $2,000. "Fair" indicates the patient is still having moderate symptoms related either to the spine or to the lumbosacral nerve roots, causing him to change to lighter work. He will be rated as having from 20 per cent to 50 per cent disability and will obtain an award of from $2,000 to $5,000. "Poor" indicates no improvement or that the patient is worse, is totally disabled,

TABLE 1.—*Review of Literature: Average of Results of Treatment of Intervertebral Disc Lesions*‡

	Total Cases	Cases with Follow-up Information	Results (Per Cent)			
			Excellent	Good†	Fair†	Poor†
22 authors*.....	5,218	4,704	57.1	33.8	7.4	3.8
All cases.....			90.9			
9 authors§.....		531	42.6	35.8	7.9	13.7
Compensation cases.....			78.4			

†See text for definition of terms.
*2, 4-7, 9, 12, 13, 15, 17, 18, 19, 22, 23, 24, 26-32.
§2, 6, 9, 13, 19, 22, 23, 24, 30.

‡These results are based on the *clinical* evaluation by the surgeon, or by some independent examiner, as mentioned in some reports. Only two authors gave their reports on the basis of actual industrial accident ratings.

TABLE 2.—*Compensation Cases: Per Cent of Patients Having No Permanent Disability, Partial and Total Disability, and Average Cost*

	Total Cases	Disability			Average Degree of Disability (Per Cent)	Average Compensation Partial Disability
		None	Partial	Total		
Wilson[30].....	100	50.0	47.0	3.0	38.7	$1,823
Raaf and Berglund[19].....	88	9.0	87.5	3.5	....	1,015
Present series.....	75	42.0	54.0	4.0	28.6	1,835

TABLE 3.—*Final Result: Comparison of Clinical with Compensation Evaluation*

	Total Cases	Net Follow-ups	Results (Per Cent)			
			Excellent	Good	Fair	Poor
By clinical evaluation.....	98	75	63.3	30	1.7	5.0
Satisfactory.....			93.3			
By compensation result.....	98	75	42.1	17.1	36.6	3.2
Satisfactory.....			59.2			

and will be awarded from $6,000 to $12,000 or a life pension of about $134 per month.

REVIEW OF LITERATURE

In a review of the literature, reports of 22 neurosurgeons who had operated on a total of 5,218 patients were studied. Fairly accurate follow-up information was available on 4,704 cases. Included were only 531 cases which were compensable (Table 1).

Wilson[30] of Akron, Ohio, in 1951 reported on 100 compensable cases (Table 2). Fifty were settled without any disability award. Of those disabled, the average rating was 38.7 per cent, and the average paid for each case was $1,823. In 1948 Raaf and Berglund[19] of Portland, Oregon, reported on 88 compensable cases. Only 9 per cent were settled without some disability award. The actual degree of disability in each case was not given, but evidently Oregon considers that more patients have some disability but not of so great a degree, as is indicated by the $1,015 average settlement per case.

In the present series all patients were followed postoperatively by the author and by the referring physician. Each referring physician or orthopedist (in cases of spinal fusion) was sent a list of the patients he had referred and was asked to evaluate the result on the basis of both subjective symptoms and the objective findings. These were averaged with the author's appraisal at the time of last examination, and a final estimate was determined as accurately as possible. In cases where there was a considerable difference of opinion, the opinion of the referring physician was used and no average was made.

By clinical evaluation, 63.3 per cent of patients in the present series obtained an excellent result, and 30 per cent a good result, making a combined satisfactory result in 93.3 per cent of the series (Table 3). The "compensation result" (Table 3) is based on actual reports from 13 insurance carriers given in degree (per cent) of permanent disability rating. The difference between the clinical result and the compensation result will be discussed later in this report.

DISTRIBUTION OF AWARDS GIVEN

Table 4 shows the awards actually given in 75 clinically grouped cases. Forty-six patients were considered to have had an excellent result, and 22 a good result. Of the 46, 26 were adjudged to have no disability. Ten were awarded a 20 per cent or less disability, costing the insurance company an average of only $1,632 each, but ten were awarded an av-

TABLE 4.—*Clinical Result Compared with Final Award*

	Excellent	Good	Fair	Poor	Total
Clinical estimation	46	22	4	3	75
Compensation award given in above cases:					
No award	26	3	0	0	29
$0 to $2,000	(10)* $1,622	(2)* $ 1,950	(1)* $ 2,000	0	13
$2,000 to $4,000	(10)* 2,836	(13)* 3,558	(2)* 2,750	0	25
$4,000 to $5,000	0	(2)* 4,850	0	0	2
$6,000 and over		(1)* 6,030		(1)* $ 6,000	
		(1)* 12,000	(1)* 12,000	(1)* 8,000	
				(1)* 12,000	6

*All parenthetical figures refer to number of patients.

TABLE 5.—*Compensation Cases: Average Per Cent Disability and Award for Patients Having Hemilaminectomy and Disc Removal Only as Compared with Those Having Same Operation Plus Spinal Fusion*

	Hemilaminectomy Cases	Average Settlement Cost	Hemilaminectomy and Fusion Cases	Average Settlement Cost
No award	20	0	10	0
Partial disability	17	$ 2,710	25	$ 3,441
Total disability	0	0	3	12,000
	37	(Average) $ 1,245	38	(Average) $ 3,212

erage of $2,836. The greatest discrepancy between the clinical and compensation results was in the group of patients considered clinically to have had "good" results. Of these 22 patients, 17 were awarded over 20 per cent disability ranging from $3,558 in 13 cases to $6,030 in one case and $12,000 in another. In a review of this group the author could find no explanation for the high awards other than that of persistent exaggeration on the part of the patient and unfounded claims on the part of his representative before the Industrial Accident Commission. In the group of patients with results classified "fair" and "poor," some indeed did have unsatisfactory outcome of treatment, which in retrospect can easily be explained. Most of the patients with "excellent" and "good" results are known to be working full time and at their usual type of work. Some have used their awards to start in some new line of work or to start a business of their own, such as building a home or operating a chicken ranch, and are working harder than before operation. One patient who received $6,000 continued her duties as an office nurse. One patient is a bouncer in a night club. One of the patients who received $12,000 was diving into a swimming pool when he had a convulsion, the first sign of a brain tumor.

Form letters of inquiry were recently sent to 17 patients who received the largest awards. Eleven replied. Eight had returned to work in less than one year, although only three said they were doing their usual kind of work. Two of the three who were not working were 58 and 63 years of age at the time of operation and the third was an obese, divorced, unhappy nurse with symptoms of hysterical nature both before and after operation. Of the six patients who received the highest awards, five had had spinal fusion, one a fracture of the pelvis with shortening of one extremity, and four had had multiple operations.

LUMBAR AND LUMBOSACRAL FUSION

Various investigators, including Spurling[24] and some others, shun spinal fusion in any case. Others suggested doing fusion at a later date if necessary, and some reported carrying out fusion in from 20 to 50 per cent of patients. About half of the patients in the present series were treated by laminectomy only, and the other half by laminectomy combined with spinal fusion. In 20 of the 37 cases in which only disc removal and nerve root decompression by hemilaminectomy were done, no permanent disability was entailed in the final settlement, and the other 17 cases were closed with an average award of $2,710. None received a large award; none were permanently disabled. The average degree of disability was 10.5 per cent and the average award was only $1,245. As to the cases of 38 patients who had fusion, only ten were closed without an award, and in 25 partial disability cases the insurance company paid an average of $3,441. The average overall disability was 27.6 per cent and the average award $3,212 (see Table 5).

DISCUSSION

The pronounced discrepancy between the clinical results and the results based on the Industrial Accident Commission rating seems unjustified. It is believed that the difference must be due to excessive complaining and exaggeration on the part of the

claimant and his representative before the Commission referee, and that undue credence and importance are given to these subjective symptoms as compared with the objective findings as reported by the surgeon or clinician. The belief that surgical decompression of a single nerve root by removal of a herniated or degenerated nucleus pulposus necessarily entails a certain degree of disability is not justified by the clinical results as reported in the literature or as observed in nonindustrial cases, and in the industrial compensation cases in the series here reported.

In herniation or protrusion of an intervertebral disc the primary problem is pain due to compression of a nerve root at the point at which it leaves the spinal canal, to stretching of the recurrent nerves as they supply the posterior spinal ligament, or to compression of the entire cauda equina by a large ruptured nucleus pulposus. Except in the early stage of stretching of the recurrent nerve filaments, the differential diagnosis and relief of pain are primarily neurosurgical. Backache, leg pain and a defect on the myelogram do not necessarily make a diagnosis of disc injury, particularly in industrial cases. Trowbridge and French[25] recently reported that in 25 of 52 cases studied by cervical myelography there were also incidental defects in the lumbar area which were symptomless and had no clinical significance. Many defects in the lumbar area do not represent lesions which compress nerve roots or the cauda. Only by careful study can the symptoms be correlated with the neurological findings and the myelographic findings. The author has often seen by myelography a large hourglass defect at the fourth disc level in cases in which the neurological findings pointed to a compression of the first sacral root by a far-laterally placed ruptured nucleus from the fifth lumbar space, which caused no roentgenographically visible defect whatever.

The differential diagnosis is not as simple as might be assumed; extradural cyst, abscess, intradural and extradural neurofibromas and meningiomas, localized arachnoiditis and early metastatic carcinoma, particularly of prostatic origin without osseous changes, are all to be considered. Diabetic and syphilitic neuritis, Guillian Barré syndrome, alcoholic (deficiency) neuritis and pernicious anemia all may give pain in the lower extremities. If such a patient should recall some minor incident at work and also have a myelographic defect due to a chronic degenerated disc with hypertrophic lipping, and exploration to remove the disc were done on the strength of these circumstances, poor results and a high disability award would be likely. Nor does the presence of a myelographic defect necessarily indicate that operative treatment will make the patient a more useful producer. The degree of nerve root compression as revealed by objective neurological findings, the degree of pain and the result of conservative treatment should be the determining factors in deciding to proceed with operative treatment.

As to the choice of operative procedure, three types of disc injuries cause distinct and different syndromes and clinical conditions and each requires a different surgical approach. In a given case, should the operation be simple unilateral partial hemilaminectomy with exposure of one root? Should another root be inspected at the same time? Is unilateral exposure sufficient to remove all the disc or is bilateral removal indicated? Do the findings at operation explain all the symptoms and signs of nerve root compression? After removal of the annulus and nucleus, do hypertrophic bony spurs persist which might continue to give symptoms? If the dura or root sleeve are torn by rupture of the disc or by manipulation, what is the best method of repair? These are all questions which must be determined by the neurological findings and by the best of neurosurgical experience and judgment. When the herniation is far lateral, sciatic pain is more severe, neurological findings are more definite, the myelographic defect is minimal or absent, but a more spectacular relief results from operative treatment. On the other hand, when the herniation is midline or there is a transverse bar protrusion, pain in the back is more severe than sciatic pain, neurological findings are minimal or absent, the myelographic defect is larger, and a more extensive exposure of the dura and nerve roots is required. The following statement is therefore justified: In disc lesions, the more lateral the herniation the more the diagnosis is a neurological problem; the more midline the herniation the more the operative exposure and removal is a neurosurgical problem. In either instance, only spinal stability is an orthopedic problem.

The indication for spinal fusion is an important one in industrial cases. The author is impressed that the best results are obtained when an orthopedic opinion has been given relative to advisability of spinal fusion. If fusion is not indicated, at least this opinion adds to the study of the case, is made a part of the record, and is important in the final disposition and rating. If fusion is indicated, it is done at the time of laminectomy. The benefit of opinions of two specialists are afforded the patient, effecting the best in clinical results and, in industrial cases, making for the least chance of disability. To authorize operative treatment for disc lesions and nerve root and caudal compression, without the benefit of neurological diagnostic confirmation and neurosurgical experience, is to entail an unjustified risk that the result will be less than satisfactory and the disability award high.

RECOMMENDATION

For the improvement of results and the lowering of disability awards, the following recommendations are made:

1. That detailed and careful histories be obtained regarding the relation of the patient's work to the disc lesion; report, if possible, a definite opinion as to whether the disc injury is totally caused by the work, is aggravated by it, or has no relation whatever.

2. That careful consideration be given to the patient's attitude, stability, tolerance for pain, his enthusiasm for his occupation, and promise for advancement, particularly in cases of questionable origin. When these features are not satisfactory or are questionable, then a settlement by compromise and release before operation should be recommended.

3. That by accurate diagnosis, selection of patients and proper surgical procedure, an attempt should be made to convince the various industrial accident commissions that the results of surgical treatment for injuries of the intervertebral disc in industrial cases should be comparable to those obtained in nonindustrial cases—should be such as to warrant a low disability rating in about 90 per cent of cases. Could this be accomplished, it is reasonable to assume that insurance carriers would be less reluctant to authorize surgical treatment.

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Conservative Treatment of Intervertebral Disc Injuries

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Dr. Werden has clearly brought to our attention, not with clinical impressions but with statistical data, a very important phase of the analysis of end results in the treatment of the low lumbar intervertebral disc syndrome. namely. the pronounced disparity between the results obtained in cases that are subject to compensation payments and those that are not.

An orthopedic surgeon who has followed the progress of many patients for a number of years after hemilaminectomy must look upon the proportion of excellent and good results—90.9 per cent—noted in the review of the literature as surprisingly high.

With all due consideration to the authors of the reports that were cited, I am wondering if the data given might more accurately be considered expressive of intermediate rather than of end results. My reason for this doubt is the increasing number of patients we are seeing who apparently had excellent recovery following a hemilaminectomy but are now, four to five years later, returning to orthopedic surgeons with complaint of chronic backache. Often investigation in such cases discloses progressive discogenic disease at the operative level. In a high proportion of cases spinal fusion is required for relief.

If this observation is valid. Dr. Werden's statistics are subject to the same criterion. However, I feel his findings of 59 per cent more closely approximate the experience of most of us. If these statements seem unduly arbitrary, please understand that I believe a certain proportion of patients with satisfactory end results under conservative treatment undoubtedly have later episodes that render them candidates for surgical intervention. It must be borne in mind, however, that a large percentage remain well and never require operation. which is an irreversible step.

Therefore, it would seem that the problem does not end with the relief of "acute sciatica" and that a long range view of the efficiency of the patient's back under his normal working conditions must be considered. The need of this symposium then becomes evident—to consider the various types and stages of treatment best suited individually for each patient, compensable or not, who has the low lumbar intervertebral disc syndrome.

I think it only fair—and I believe Dr. Werden will agree—to bring to your attention that there are differences between states, from a dollar standpoint, as to what clinical disabilities constitute measurable permanent disabilities. Hence. statistical comparisons of end results confined to the State of California will give us a clearer picture of this phase of the problem.

For some time, I have been interested in the subject of the lumbar intervertebral disc syndrome approached from the conservative viewpoint, and have submitted some 205 cases, private and compensable, to a similar statistical analysis of end results over a ten-year period. Striking similarities exist, in some phases, between Dr. Werden's findings and my own —and also, a few glaring discrepancies.

In order to eliminate so far as possible the factor of disagreement concerning the relative surgical skill of the orthopedic surgeon and the neurosurgeon in this particular operative procedure. I will state that all hemilaminectomies in the series here discussed were performed by outstanding neurosurgeons in the San Francisco Bay Area.

As in Dr. Werden's report, the patients had positive diagnosis of protruded intervertebral discs, they were operated upon by neurosurgeons and they all resided in California. (This applies to 27 per cent of the present series only. as the remainder were not treated surgically.) In 64 per cent of the private and 45 per cent of the industrial cases the patient was sufficiently recovered that operation was not indicated.

As to the conservative treatment used in the series, suffice it to say that a uniform protocol was followed throughout, consisting of the usual four main components—rest, support, rehabilitation exercises with or without physical therapy, and time—to which was added a fifth: Manipulation. The results are shown in Table 1. The average period of follow-up was almost two years; the shortest period was six months and the longest ten years.

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TABLE 1.—*Results of Manipulative Treatment*

	Number of Cases	Results (Per Cent)				
		Satisfactory			Unsatisfactory	
		Excellent	Good	Fair	Immediately	Ultimately
Private Patients	72	32	32	11	20	5
Industrial Patients	133	25	20	18	29	8

TABLE 2.—*Results of Laminectomy in Compensable and in Privately Treated Patients Who Were Not Adequately Benefited by Conservative Treatment*

	Number of Cases	Excellent	Good	Fair	Poor
Private patients	17	4	6	7	0
Industrial patients	39	7	11	13	8
Total	56	11	17	20	8

The manipulative treatment was arbitrarily restricted to two attempts in each case and operation was immediately recommended to those patients who did not have satisfactory results. Laminectomy was done in 56 cases (27 per cent of the series). Thirty-nine of the patients were subject to industrial compensation and 17 were privately treated. Spinal fusion was an additional procedure in seven compensable patients and in one private patient. The results are shown in Table 2. As in Dr. Werden's report, the results were much poorer in industrial than in private cases. Reducing the comparable data in the two series to percentage, we note that 18 per cent of the surgically treated patients in our series recovered without measurable permanent disability, as against 42 per cent in Dr. Werden's series.

On the other hand, in the 94 industrial cases in the present series in which conservative therapy, including manipulation, was successful, 77 per cent of patients recovered without measurable permanent disability. For the entire series of 133 cases, including those surgically and those conservatively treated, 59.4 per cent of patients recovered without measurable permanent disability. In the 60 cases finally adjudicated in the Werden series, 21 were closed without award—35 per cent.

In the cases that were ratable, the average dollar cost per case in permanent disability awards was $6,073 in the Werden series and in ours $4,728. The average cost in permanent disability awards for patients treated by manipulation (present series) was $2,156.

Our observations are in complete agreement with Dr. Werden's, relative to the pronounced disparity in results between industrial and private patients and between the clinical results and the assumed permanent disability on industrial ratings. His comments as to causes are subscribed to by ourselves.

On the basis of comparison of results reported by Werden and those in the present series, it would seem indicated that for patients with herniated intervertebral disc, conservative treatment, including manipulation, be tried first. Failure of conservative treatment in no way interferes with operation later if necessary. The only loss is time and the cost of a few additional days of hospitalization.

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Treatment of Protruded Disc By Laminectomy Only

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As PREFACE to my discussion of Dr. Werden's paper, it may be well to recognize that I do so from the standpoint of "Treatment of Protruded Disc by Laminectomy Only." It is probable the assignment was given to me because of my known belief that the simple disc operation is satisfactory in the majority of cases. Furthermore, I believe there is no indication for the combined operation—the removal of the disc by a neurosurgeon and then fusion by an orthopedist—and I believe that the surgeon should be able to diagnose and administer treatment, whether it be operative or nonoperative and whether he be a neurosurgeon or an orthopedic surgeon.

Although I think we are all a little afraid of statistics, we will have to congratulate Dr. Werden on the clinical results obtained in compensation cases. As to the wide difference between the clinical results and the results as judged from the standpoint of compensation awarded to the patients, I do not believe that these differences should surprise us too much if properly analyzed. A surgeon, in evaluating results in patients he has treated has a biased opinion. He wants the patient to get well. It is also deflating to his ego if the results are poor. Therefore, it is his natural tendency to over-evaluate and to classify his results as better than another surgeon would or better than the patient himself would. On the other hand, the cash settlement paid out by the insuror is probably often higher than is justified. This is because a patient may magnify, either consciously or subconsciously, the severity of symptoms.

Dr. Werden said that of 76 patients, 38 had the easy operation, and 38 had the hard operation. Of the 38 who had the easy operation, only 17 received money. Of the 38 who had the hard operation, 27 received money. The average amount received by those who had the easy operation was $2,758. For 24 of the 27 who had the hard operation the average settlement was $3,463. The three others received $12,000 each. I would like to know on what basis the candidates were chosen for the combined operation and what were the complications that contributed to this degree of disability. Could some of these patients have had displacement of bone chips? How often did pseudarthrosis of the fusion occur? Were there any unrecognized cases of interbody infections? Were there any cases of arachnoiditis?

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Dr. Werden said that "In disc lesions, the more lateral the herniation, the more diagnosis is a neurological problem, and the more midline the herniation or protrusion, the more the operative exposure and removal is a neurosurgical problem, and "In either instance, only spinal stability is an orthopedic problem." On that point, I can only say that the more lateral the lesion, the more definite the neurological findings—so much so that even a second year medical student should be able to diagnose the case. The operation is very simple, and the results are usually quite good. The more midline the lesion, the more obscure the neurological findings and the more the physical findings are confined to the back. In many cases, so localized are the findings that the neurosurgeon believes that it must be an orthopedic problem having something to do with instability. Why should we call one phase of the condition a neurosurgical problem and another phase of the condition an orthopedic problem? I believe the time has come that our teaching should be that the surgeon, whether he be an orthopedic surgeon or a neurosurgeon, should be able to diagnose herniation of a disc and administer treatment whether operative or nonoperative. I believe the neurosurgeon should be criticized from the standpoint that too often he will undertake operative treatment of disc disease but cannot be bothered with nonoperative treatment. Also, if the patient has residual back pain after operation, the case becomes an orthopedic problem. The orthopedic surgeon, on the other hand, should be criticized if he has failed to recognize certain physical findings which indicate intervertebral disc disease or if he has not correlated these physical findings with pathological changes that are evident on exploration of the neural canal. There are still too many orthopedists who will make a diagnosis of unstable lumbosacral joint when the true condition is a degenerative change in the disc. To illustrate, I quote from the reports of a prominent orthopedic surgeon and a prominent neurosurgeon who examined the same patient, who was subject to industrial compensation.

Orthopedic opinion: "She has evidence of an unstable lumbosacral joint as manifested by a narrowing of the fifth interspace. At the present time, I believe that she is disabled from work requiring lifting. She could, however, carry out work which did not require lifting and bending and stooping. I feel that she should be fitted with a back brace and that this back brace should be used for a period of four or five months, concurrently with which the patient should carry on exercises to strengthen the musculature of the back. It is probable that on this program she will recover without disability."

Neurosurgeon's opinion: "It is my opinion that this patient probably has a degeneration of her lumbosacral intervertebral disc which makes it vulnerable to recurrent protrusions through a thinned-out annular ligament. It is recommended that she be referred to an orthopedist and that he consider the use of some type of low back support. We do not believe that we have much to offer her inasmuch as there are no surgical measures indicated at this time."

It is unfair to the patient that he be subjected to this vacillation and indecision, because neither the neurosurgeon nor the orthopedist is capable of diagnosing and treating all phases of disc disease. The shunting of the patient back and forth leads to poor doctor-patient relationship and loss of confidence, and in the end probably has a great deal of effect on the amount of money awarded for partial permanent disability.

In conclusion, I want to challenge the author's statement, "In disc lesions only spinal stability is an orthopedic problem." I also want to challenge those orthopedists who will support or acquiesce to such an opinion. Either surgeon should treat all phases and stages of disc disease. How specialized a surgeon must have become, that he will only perform half of an operation!

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Laminectomy and Fusion For Disc Lesions

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As material for a discussion of treatment of intervertebral disc lesions by laminectomy and by fusion, records of 50 patients not previously operated upon, who were treated by one surgical team (the authors) in the years 1950-1955, were reviewed. No attempt was made to select the cases. Also reviewed were eight cases of patients who were dealt with after they had been treated elsewhere without satisfactory result.

Ten of the 50 cases in the first group were industrial and 40 were nonindustrial. (The nonindustrial cases included two in which the patients sought care after the termination of their industrial status.) No new methods were used. Laminectomy was done with the patient prone or lying on his side. Spine fusion was accomplished either by fitting "bone blocks" between the spines of the lumbar vertebrae and also

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placing multiple bone chips, or by the multiple bone chip method alone without attempt to destroy articulating facets. Laminectomy was done in 50 cases and spinal fusion in 14. In 19 cases there were enlarged or frankly extruded discs, but in the remainder of cases the pathological condition was less forthright —degenerated disc, nerve root adherent to the underlying disc material, enlarged edematous nerve, angulations of the sacrum in such a way as to cause stretching effect on the nerve posteriorly rather than anteriorly.

Results were classified as *good*, *fair* or *poor*. They were considered *good* if the patient had minimal ache and restriction of activity, was capable of doing his regular work and had only occasional mild recurrence; *fair* if the patient had some continuing complaint with acute recurrence necessitating conservative treatment from time to time but was able to continue work at regular assignments; *poor* if the patient could not successfully continue working and felt that the relief obtained was insufficient to warrant the discomforts of the operation. By these standards, results were as follows:

All Cases in the Series

	No. Cases	Per Cent
Good	25	50
Fair	16	32
Poor	9	18

Twelve Cases Involving Compensation or Litigation

	No. Cases	Per Cent
Good	5	42
Fair	3	25
Poor	4	33

Results of Spinal Fusion (14 Cases)

	Industrial	Nonindustrial	Total	Per Cent
Good	1	5	6	43
Fair	1	5	6	43
Poor	2	0	2	14

The proportion of acceptable results in the cases reviewed was somewhat higher than is generally reported in such series. One striking factor was the results in cases in which spinal fusion was done. Poor results in 14 per cent of cases is not high, considering the fact that the group included cases involving litigation or compensation. There were no failures in the cases in which these factors were not present. The results may be considered the more significant in light of the fact that fusion was done only in the most perplexing and difficult cases. In cases with a long history of pain, recurrent episodes and consultation with many physicians, the authors had poor response to conservative treatment either in the office or in the hospital. And in such cases when operation was carried out and the condition observed was not a large protruded or obviously extruded disc, but was rather degenerative protrusion, edematous adherent nerve, abnormal lumbosacral angle and/or unstable joint, fusion was resorted to.

All of the previously mentioned eight patients who had been treated elsewhere with unsatisfactory results had had laminectomy. Some of them had had more than one such operation. In four of those cases, one industrial and three nonindustrial, the authors carried out spinal fusion. Results were good in two nonindustrial cases and fair in the other two.

It was concluded from review of data on the two groups that there is no great difficulty in dealing with cases of gross protrusion or frank extrusion. Rather, the problems most often lie in treatment of "degenerative" conditions. From the data presented it would seem that greater application of the fusion operation in difficult cases, rather than laminectomy alone, could often bring about an acceptable result in cases in which without it the result would be poor.

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Treatment of Mental Illness

The Use and Misuse of Sedation and the Seclusion Room

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• Nine hundred and thirty-nine patients admitted to the locked receiving ward in the psychiatric service of the U. S. Naval Hospital, Oakland, over a ten-month period, many of them psychotic and in an acute initial episode, were treated with an intensive group therapy program, which more appropriately should be called a therapeutic community. During this time, the ward medical officer did not put any patients in a seclusion room. Patients who did not require a locked ward were quickly transferred to the open receiving ward which was established five months after this program began.

It was possible to greatly diminish the quantity of sleeping medicine prescribed and practically to eliminate the use of barbiturates given parenterally. Restraints were never used. To be dealt with in this atmosphere of candor and relative freedom seemed to evoke a responsive attitude in the patients and many of them benefited from it.

THE PURPOSE of this communication is to report an experiment in the operation of the receiving ward of the psychiatric service at the U. S. Naval Hospital, Oakland, California, over a ten-month period. During that time, it was found that barbiturate sedation was in most instances unnecessary, and often contraindicated, and that use of the seclusion room was not required. No form of mechanical restraint was employed. Cold packs were not used and there was no hydrotherapy available on the ward. It is felt that the experience on this ward, dealing with a total of approximately 1,000 patients, has direct bearing upon the care of emotionally ill and mentally ill patients in offices and in general and psychiatric hospitals.

Between July 1955 and mid-April 1956, the author was medical officer on the admission ward. In that time 939 patients were received on this ward, where they remained for an average of ten days before being assigned to a locked or unlocked ward in the psychiatric service. In addition to routine admission procedures and responsibilities, this ward was organized as a "therapeutic community." (This concept was adapted, with modifications, from the techniques and philosophies of Dr. Maxwell Jones, Belmont Hospital[4]; Dr. T. P. Rees, Warlingham Park[7]; and Dr. T. F. Main, Cassel Hospital,[6] which the author observed while on temporary naval duty in England.)

The ward was a large temporary wooden structure containing 34 beds lined up on either side of a single room. The outside doors were locked and patients were not permitted off the ward unattended. There were two nurses on duty during the day, three or four corpsmen, and a social worker. The staff was not selected but was designated in normal rotation of Navy personnel.

The concept of the therapeutic community involves as free communication as possible between patients, between patients and staff and between members of the staff. Treatment is continuous through 24 hours of each day on the ward, and whatever is said or done there is a matter of ward concern. Above all the therapeutic community is based on a sincere concern for the welfare of the patients. Without this, no amount of technique will work. In the present experiment the staff was told in the beginning that the use of the quiet room would be discontinued and that sleeping pills were to be given only in unusual circumstances. A formal sick call was to be held at 8:30 each morning, followed by a ward group meeting lasting about 45 minutes, at which all patients and staff—nurses and corpsmen—were expected to be present. Only the simple device of firmly expecting the patients to attend was used—no threats or demands—and only two of 939 patients refused to attend meetings. Both were severe paranoid schizophrenic patients overwhelmed by fear.

Immediately after the group meeting, the staff met separately for 30 minutes, during which time the meeting was discussed and ward or staff problems were brought up. The night crew would leave a letter about the previous evening's activity on the ward, and the ward medical officers would write them about the day's happenings. These written communications were usually read to the staff. While the staff was holding its separate meeting, the patients gathered in a spontaneous group on the ward. Once a week a

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The opinions contained herein are those of the author and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

meeting was held with the corpsmen, and another with the nurses. In effect, this was on-the-job training for personnel.

At first, the staff doubted whether the ward could be operated in this fashion, without use of quiet rooms, restraint and parenteral sedation. Within two or three months the fact that it *would* work was obvious to all; but even more striking was that the best and most humane qualities in staff and patients were brought to the fore. It was, as one corpsman said, "believing in what you are doing—I suppose one could say faith."

The routines of the ward were simple, yet in a sense demanding. It was group-oriented—yet group therapy *per se* played only a small part. It was group living and intergroup living; it was continuous communication and the process of enculturation into the hospital.

When a patient entered during working hours, he was seen by the ward physician within an hour. Strict adherence to this simple rule had a decided effect on many patients. The friendly meeting, with a brief explanation of how the ward was conducted, was motivated by a sincere interest in the patients—a fact which most of them wanted to believe but of which a few were suspicious. It was capitalizing on the reservoir of faith that most people have in physicians. On the bulletin board in the ward was placed a sheet of paper on which any patient wishing to speak with the doctor individually could write his name. Each was seen in order, as time permitted, but always within 48 hours. The names were conspicuously checked off for all to see. This had the effect of decreasing demands for interview, and a glance at the list would serve as a barometer of ward pressure.

Since, so far as could be determined, there is no published experience of daily group work on an admission ward in a military hospital that could be used as a guide, our concepts were developed and adapted as time went on. Because of the rapid turnover of patients, it was found advantageous to add a Saturday group meeting. The group served as a constant safety-valve and was often a moving manifestation of the wish of people to help one another.

Being the only medical officer served me to advantage, since thus I knew each patient individually. The nurses, corpsmen, patients and I all belonged to the same military organization, and every effort was made to utilize the best features of military life for therapeutic goals. For example, certain ideas of obedience and conformity, respect and pride of belonging to a group unit, the spirit of working together for survival, the tolerance of racial and religious differences and self-respect were utilized to foster a favorable treatment situation. Twice a week I met briefly in my office with the patients who were officers, chief petty officers and sergeants, and as a consequence they were able to retain their self-respect and status to some degree.

The special nature of the patient sample should be given careful consideration in evaluating the results. Data on the first 250 patients were analyzed as follows: Navy personnel comprised 75 per cent of the group, and Marine Corps personnel 24 per cent. The average age was 24.3 years, and the average length of service was 4.7 years. Of the 250 patients, 91.1 per cent were Caucasian, and two-thirds of the remaining 8.9 per cent were negroid. The group included nine officers and 29 sergeants or chiefs. Admission records showed that 21.6 per cent of the patients had come to the hospital from foreign stations, 32.4 per cent from ships in the Pacific and 46 per cent from shore stations in the United States. In terms of diagnosis, 44.4 per cent of the patients were psychotic (principally with mixed schizophrenic reactions or paranoid schizophrenia); 35.6 per cent were psychoneurotic; and 20 per cent had character or personality disorders. Almost all the psychotic patients had had no previous episodes of acute manifestation of disease and had had no previous treatment except in transit.

This communication will not discuss the group meetings in detail. It should be borne in mind, however, that group membership was constantly changing, with an average of three patients coming and going every day, and that the entry of severely sick new patients formed a spontaneous psychodrama.

In the year preceding July 1955, judging by a careful study of the psychiatric service log, there had been numerous incidents and disturbances. During the three months I had observed this ward as occasional officer of the day, I noted that the two quiet rooms were in almost constant use, and often patients could be heard beating on the doors. In these small bare locked rooms with only a mattress on the floor and the words QUIET ROOM painted over the door, patients who were most psychotic, delusional and hallucinatory were placed immediately on admission, *as if* they were too sick to be on the ward. Patients who had attempted suicide or were thought to be seriously suicidal were placed in these rooms *as if* it were not safe for them to be on the ward. It was a common procedure to give the disturbed patients barbiturates intravenously on admittance, which often made confinement in the seclusion rooms seemingly mandatory, since the patients became more confused, more disturbed by their sense of unreality and hallucinations and less responsive to directions. Moreover they were rendered weak and powerless and lost coordination.

It was our belief that the seclusion rooms did not offer as great safekeeping as the open ward, that use of them fostered regression and withdrawal, accentuated the fear of social contact, increased the sense of stigmatization as insane, confirmed the fear in a patient that he might lose all control and go to pieces, tended to lower self-control by placing him in a situation where he "could go crazy," or fostered in some neurotics the need for special privilege. For those patients who were not in the seclusion room, it meant other things: Some were intimidated, fearing they might be next; some of the sicker ones misinterpreted the yelling they heard from the seclusion rooms. For example, one psychotic patient, describing an experience in a previous hospital, demanded of me in the first interview, "What did they do with the body?" It turned out that a patient had been placed in a quiet room and then had been transferred to another hospital without making a reappearance on the ward. In other patients fears were aroused about the patients who were thought so dangerous by the doctors that they had to be in solitary confinement. Furthermore, if a doctor acquiesced in sending a patient to the quiet room on his own request, he often became a partner in the patient's acting out.

In July 1955, instructions were given to the staff that we would operate the ward as if we did not have quiet rooms. Within a month the mattresses were removed from the quiet rooms; one of the rooms was then furnished as an office and the other as a music room, with a piano. I was always aware of the possibility that an emergency could arise requiring isolation, but felt that even if that did occur, it would only be the exception to the rule.

Over a ten-month period with about 1,000 patients, a few of them desperately psychotic, suicidal or homicidal, I did not once find it necessary to place a patient in a seclusion room. It was not uncommon for as many as five to ten patients at a time to be admitted to the ward—some of them in various forms of mechanical restraint and many of them having spent days or weeks in seclusion rooms in other hospitals. Despite the fact that we told the patients we did not use quiet rooms on this ward, on five occasions the officer of the day, who was not a member of the admission ward staff but a psychiatrist from a different ward, placed a patient in a quiet room at night. The first time was six weeks after the ward began to be operated as a therapeutic community, and it came to my attention in a curious way. On a Wednesday morning, after a group had talked considerably about insomnia, a patient had become angry because of being refused a sleeping pill by the corpsman. This patient asked to see me after the meeting, and he told me he had been unable to sleep since a nightmare he had had early the previous Monday morning. "Someone was yelling and getting hurt," he said. "I tried to wake up but couldn't. I felt paralyzed. Finally I awoke, afraid. I looked at my watch and it was 3 o'clock. I fell asleep in about an hour."

I mentioned this patient's dream to the nurse that afternoon and she told me that early on Monday morning the patient in the bed next to his had become upset, said he was afraid he would lose control and hurt someone, and asked to be placed in the quiet room. The officer of the day had come to see him at 3 a.m., prescribed a sedative and placed him in the quiet room, where he remained for an hour.

Upon learning this, I reviewed my notes on the group meetings, and found that Monday's group discussion, which had been devoted to the problem of being a mental patient, had been punctuated by statements by patients such as "God helps those who help themselves." In summarizing the group discussion of that day, I had noted that the patients spoke as if they had been talking about the need to deny certain things and that while they had talked a great deal, there seemed to be an idea that talking was dangerous.

As time went on this interpretation was confirmed, for it was observed that patients tended to have the feeling, when they first came into the hospital, that if they talked about what was *really* on their minds, they would be put in the quiet room.

I talked to the patient who had been angry because he was unable to sleep, and he denied any knowledge that the patient next to him had been anywhere except in his bed throughout the night. However, the insomnia disappeared.

In the second incident involving use of the quiet room, the patient had been admitted on the week-end —these quiet room incidents occurred on week-ends —and I had not seen him. He was a manic depressive patient in a manic phase and had been in a seclusion room in another hospital. He had been reassured by a corpsman that quiet rooms were not used on this ward. Later in the night, however, the officer of the day had been called to see the patient, had given him a large dose of a barbiturate and had put him in the quiet room. The Monday morning group discussion began with great excitement, with the patient in question standing up and yelling at me, "Speak, doctor, speak. I'm not afraid of being crazy, I'm not going to hurt you." When I asked him directly if he had been in a quiet room, he became even angrier with me, suspecting subterfuge, which was in keeping with experience on the ward—that is, reality. It was not necessary to seclude this patient again, and he made a reasonably good recovery, although on one occasion he provoked a brief fight.

In an individual interview with the patient after the group meeting, he cried almost the entire time. I asked him about the night before, and he replied: "How did I feel? How do you think I felt? I'm not supposed to be put in a quiet room by anyone just because he hates me. You know and I know that I'm sane. I won't hurt you. The officer of the day thought I was crazy. He didn't like me. I don't want to go back in the quiet room. You won't put me there, will you?" He then related to me a profound claustrophobia from early life.

The next instance of a patient being put in the quiet room on the admission ward was again not directly brought to my attention. The officer of the day transferred a patient who was drunk from open ward to admission ward, placing him in a quiet room with instructions that he was to be returned to the open ward at 7 o'clock the next morning.

The fourth patient placed in the quiet room was a hebephrenic schizophrenic patient who requested immediately on admission that he be given a private room. This was on a Sunday and on Monday morning he was removed from the quiet room.

It was five months before another patient was placed in the quiet room. This time a patient who, before admittance, had tried to kill himself by cutting his wrists, was heavily sedated with sodium amytal by the officer of the day. Then, because he was so groggy he could not stand, he was placed on a mattress in the quiet room. He might have been placed in a bed on the ward equipped with side rails.

It should be emphasized that over half of the patients admitted to our ward were not psychotic. It was for aggressive patients, or for the occasional patient who was greatly disoriented, delusional or tormented by hallucinations, that seclusion had been considered in the past. Now, on almost any day the ward would look like any medical or surgical ward, the patients conversing quietly, friendly and well behaved.

Unquestionably the seclusion room is sometimes used punitively; witness the colloquialism, "Throw 'em in the quiet room." Unquestionably also, patients are sometimes maltreated, and this maltreatment usually takes place in a quiet room or in an isolated room where it cannot be witnessed. This is one of the reasons putting an end to such practices is difficult—and also one of the reasons why care of the mentally ill must be brought into the open, both literally and figuratively. The physician himself must be responsible for seeing that maltreatment of the mentally ill does not occur even occasionally.

There is nothing new in the approach discussed here. With regard to sedation, there are innumerable references in the literature to its abuse. As to restraint and seclusion, over one hundred years ago it was argued before the American Psychiatric Association that nonrestraint might work for the relatively mild, complacent English but not for the more violent, liberty-loving Americans.

Only about 8 per cent of the first 250 patients admitted in the period reviewed received the tranquilizing drugs chlorpromazine and reserpine. After four months, when it became evident that the social and therapeutic experience of the ward milieu was effective and that its efficacy did not depend upon medication, we felt free to evaluate the newer drugs on this ward. Consequently, by the end of ten months 27.6 per cent of the patients were receiving one or the other of these drugs. They were considered to be of particular help in the more aggressive, hyperactive psychotic patients and patients in delirium tremens.

Table 1 shows the use of barbiturates on the receiving ward during the period of the therapeutic community in comparison with their use during the four months immediately preceding its establishment. In the preceding four months, during which 440 patients were admitted, 263 doses of barbiturates and 51 injections of sodium amytal had been given. In contrast, during the first full four months of the therapeutic community experiment, a period in which 367 patients were admitted, 53 doses of barbiturates and five injections of sodium amytal were given; and in the last four-month period of the experiment, with 443 patients admitted, there were only 19 doses of barbiturates given and five injections of sodium amytal. During the entire ten-month period under review, the ward medical officer ordered only 23 doses of barbiturates and three injections of sodium amytal, for patients in acute excitement; all the remaining were given on order of the officer of the day.

The decline in the use of the quiet room and sedation on the receiving ward, as well as an increase in use of the tranquilizing drugs, coincided with a decrease in use of electroshock and a discontinuance of the use of insulin coma therapy in the hospital. Only one patient received electroshock while in the admission ward. He was very violent on admission, kicking in a door and striking at me, but he settled down and remained quiet on the ward, although he would not come to the group meetings. On one occasion, he took a corpsman's key and ran from the ward. At no time did he strike another patient or do any violence once he was in pajamas and actually admitted to the ward. I was so inseparably enmeshed in his delusional system that he was almost totally out of reach of psychotherapy. He improved dramatically after a number of electroshock treatments. In general, however, it was my impression

TABLE 1.—*Use of Barbiturates on the Receiving Ward Between January 1955 and April 1956

	No. of Admissions	Nembutal 100 mg.	Seconal 100 mg.	Sodium Amytal 0.2 gm.	Sodium Amytal Intramuscularly 0.5 gm.
1955 (prior to therapeutic community):					
Mar.	128	23	18	21	19
Apr.	116	40	6	10	19
May	99	18	27	12	10
June	97	52	31	5	3
	440	133	82	48	51
(Transition month):					
July	79	43	10	5	1
(Therapeutic community):					
Aug.	91	7	9	0	1
Sept.	90	5	16	6	0
Oct.	86	5	1	0	0
Nov.	100	0	2	2	4
	367	17	28	8	5
Dec.	102	0	1	0	0
1956:					
Jan.	127	0	5	5	2
Feb.	86	0	4	0	1
Mar.	128	0	4	0	2
	443	0	14	5	5

*These data are taken from the nursing log. In addition to the above, one injection of sodium phenobarbital was given in March, 1955, and one in March, 1956. Phenobarbital 30 mg. was given largely in cases of epilepsy after July, 1955, a total of 145 tablets in all. In the preceding four months, 58 tablets were given. A total of 1 cc. of nembutal was given after July, 1955, and no sodium amytal. The total of 939 includes 50 patients admitted in early April 1956.

that the pendulum swung too far—that electroshock was not given to depressed patients who might well have profited by it. This is understandable, perhaps, in light of the history of abuse of electroshock in the last decade. But abuse of the prescription of sleeping medication can, I believe, run no danger if the pendulum swings far the other way. If one is going to decrease the amount of barbiturates, it is necessary to discuss the matter with the patient, and also to talk with him about the reason for his insomnia. Patients who have been taking barbiturates every night for a month have had medication discontinued, to their conscious relief, and have found that after a few restless nights they have usually worried their problems through to relatively constructive solutions. This is not necessarily done alone, but is facilitated by the therapeutic community.

It was our definite impression that giving barbiturates by mouth or by injection in large doses made schizophrenic patients more confused, more at the mercy of hallucinations and delusions and at a great disadvantage in dealing with reality. It fostered disorientation and clouding of consciousness and perception. It also seemed to make schizophrenic patients less amenable to psychotherapy. The routine use of barbiturates in the transfer of patients from hospital to hospital was observed as a definite complication in the transportation and reception of the patient. The routine use of barbiturates for neurotic patients and patients with character disorders who were being transferred was not only resented by them but was found to be unnecessary and even deleterious.

Many physicians apparently feel that in dealing with an acutely disturbed patient the first thing to do is to put him to sleep. There is also an impulse toward ordering sleeping medicine for insomnia patients. Many times, it seems from reading the records, these drugs have been given not because the patient could not tolerate his anxiety and insomnia (as evidenced by his toleration of it on our ward) but because the physician could not tolerate the anxiety aroused within himself. Another reason for the "routine" prescription of sleeping medicine is to insure the physician's own sleep. The care of the patient begins always with *caring* for the patient.

A patient came to my office one evening for a sleeping pill, saying he had been given one every night in another hospital since he had been sick. I explained that this was not done on this ward except in unusual circumstances and that patients tended to become dependent on these drugs. He said he thought that was a good idea and thanked me. He slept that night. The next day, he asked to see me and said, "I left your office reasoning a lot of things out, and was much more relaxed. I reasoned them out for myself for the first time. I realized I hadn't lost my faith or my family. I called my father. He reassured me that everything would be all right. I suddenly felt relaxed and dropped off to sleep. I dreamed about my wife."

The problem of the sleeping pill is not unlike the problem of the quiet room. We are asking people to call upon the reservoir of strength existing within them. Just as the sleeping pill diminishes stress to a point where a patient is often at the mercy of his fantasy and distorted thinking, so the seclusion room, with its absence of social stresses, produces other stresses of its own. There is evidence in the literature that isolation *per se*, even in healthy persons, acts as a powerful stress; and when the level of physical stimuli is diminished to the lowest possible point, a normal person may be driven to visual hallucination.[5] It is my clinical impression that isolation in the seclusion room and the use of restraints and barbiturates in large doses act as stress factors stimulating further psychotic symptoms and aggressive behavior.

There is a great deal written in the literature about meeting the patient's needs. One of the needs is to set limits. The therapeutic community has permitted us effectively to set limits on social behavior, making the seclusion room practically unnecessary.

and has permitted us to set limits on the prescription of sedatives—in effect, to say no. A very hostile Marine officer, aware of our policy in regard to sleeping medication, demanded in the middle of the night that the corpsman call the officer of the day for a sedative. The patient stood by as the corpsman called the doctor, who instructed the corpsman to give the patient what he requested. The patient, without waiting to hear the answer, turned away in sullen resignation (and probably some satisfaction of a hostile nature) saying, "Yeah, I know—no pills," and walked to his bed and fell asleep.

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The author wishes to express his appreciation to Rear Admiral Bartholomew Hogan, Surgeon General, U. S. Navy; Capt. George Raines, Chief of Neuropsychiatry Branch, U. S. Navy, and particularly to the staff of U. S. Naval Hospital, Oakland, for their help.

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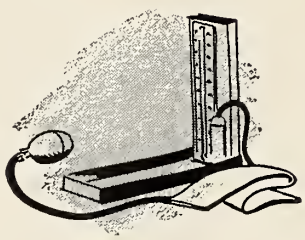

The Whiplash Injury

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Recent medical literature contains many articles describing the so-called "whiplash injury" received in automobile collisions. There has been very little written regarding the physical forces of static inertia and the inertia of motion by which these injuries are brought about. In the literature it has been widely reported that the injured person, describing what happened to him, often says that the car in which he was riding was struck from the rear, that he was projected forward into the windshield or the steering wheel and then felt a jerk backward. In a study of the subject the author's observations were that this sequence of events did not occur in the circumstances given.

In a study of kinematics of impact,* graphs were made showing the motions of cars involved in a front and rear collision. The rearward car in these experiments was driven by a human and in the car that was struck there was a dummy with the head fixed to the trunk by means of a coil spring having equal resistance in all planes of motion. Motion pictures were taken of collisions. The time between consecutive pictures was 1/64th of a second. At the site of collision, markers were spaced at 2-foot intervals parallel to the motion of the cars. The markers were reversed and the collisions repeated to obtain accuracy. By measuring the distance from a marker to a marked part of the car, the distance of movement of the cars was determined. Correction was made for the paralax of the position of the camera and the distance between the car and the marker. The motion of the car was plotted against time on a graph. The velocity of the car was determined by dividing the distance ordinate of the tangent at any given point of the curve by the time abscissa. The velocity, likewise, was then plotted against time. The acceleration of the car was then determined by dividing the velocity of the ordinate of the tangent to the curve by its time abscissa.

This is technically known as finding the "slope of the curve." If the slope is to the right, the value is positive and if to the left the value is negative.

For a given mass, the force acting upon it which produces motion, is proportional to the acceleration. Therefore if the acceleration and the mass involved is known, it is a simple matter to calculate the force producing the acceleration by the formula† as follows:

$$F = \frac{W}{G} \times A.$$

The purpose of the study was to answer this question:

When a car is stopped temporarily at an intersection and is bumped from the rear by another car headed in the same direction, what is the effect physically on the drivers of the two cars?

Without definite information as to the weight of each car and driver, the slope and the condition of the road, the velocity of the moving car at the time of the impact, the resilience of the bumpers, the posture of the drivers, together with other factors, this question can be answered only in a general way. Let it be assumed that the collision occurs on a level, paved highway, that the cars are of equal weight and that the car that is struck from the rear is stationary at an intersection, the driver being relaxed and not anticipating a collision. The car approaching from the rear fails to stop in time and collides with the stationary car. The driver of the moving car usually has applied his brakes before the impact, causing the front of his car to nose downward, the top of his bumper therefore hitting the lower portion of the recipient's bumper or even passing beneath it. Or, because of the variability of the height of bumpers, the bumpers might be on the same plane at the moment of impact. The bumpers of both cars will absorb some of the force of the impact, the amount depending upon their resilience. The maximum force of impact between the two cars does not occur until the bumpers or other parts of the cars are deformed to the greatest extent from the amount of force applied. Therefore, the greater the resilience, the longer the time of deceleration of the moving car and of acceleration of the stationary car, and the less the effect of the impact on the persons in the cars. During the time of impact and the partial absorption of the blow by yielding bumpers, the rearward car is decelerating at a rapid rate and the forward car is accelerating at a rapid rate. The driver of the forward car does not immediately experience this rapid acceleration, as there is a very brief interval before the impulse

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*The City of Vallejo Police Department cooperated in the present study. Vehicles used were supplied gratis by the Marine Chevrolet Company of Vallejo. The physical calculations were made by L. Bryan, A.B.D., and the photographic work was done by Carl Manner, A.B.D., both of the faculty of Vallejo Junior College.

†F = Force in pounds; W = Weight in pounds; G = Acceleration due to gravity (32 ft./sec.²); A = Acceleration in ft./sec.²

passes through the body of the car and is transferred to him. As the car moves forward, his body tends to remain stationary in space, since he is not in motion at the time of the impact. The effect of this is that he is thrust backward against the seat of the car, and his body, not being supported by the seat from the shoulders upward, acts and conforms as an inverted pendulum pivoting about the sacral region. The maximum degree of momentum is received by the head pivoting backward on the neck, causing it to continue its motion even after the initial or original impulse has terminated (Chart A). During this backward swing of the neck with respect to the rest of the body, there occurs a tendency toward an elongation of the neck and subsequently a protective reflex contraction of the musculature of the neck, depending upon the involuntary reflex time of the individual. This contraction of the musculature of the neck is considered a protective response comparable to that occurring when a hand is inadvertently placed on a hot stove. At approximately midway in the time duration of the impact the two cars arrive at the same velocity. Then, unless they are locked together, the cars separate owing to a rebound impulse and the effect of braking on the rearward car. At the instant of separation the forward car begins to decelerate. This deceleration rate is small compared to the acceleration that occurred upon impact. At the time deceleration begins, the body of the passenger in the forward car is still in the thrust backward position in the seat. Again there is a slight delay between the motion of the car and that of the driver. His head may not even have reached its maximum backward motion at the time the car begins to decelerate. However, in a small fraction of a second, the passenger experiences the same deceleration as the car. This causes his body to swing forward, which is further aided by his normal reflex action; and the forces by this time are much less than those obtaining at the instant of impact. The speed of the forward motion of his body is considered due to the resilience of the seat and to the acquired momentum of the body (depending upon, of course, the force of the impact and the velocity acquired during the impact and the rate of deceleration of the rest of the car); and, as previously noted, it may also be greatly increased by the recipient's reflex protective action.

The effect of collision on the driver of the rearward car is calculated as follows:

Realizing the impending impact, he suddenly applies his brakes, his muscles are tensed and he is afforded protective bracing by the steering wheel and his relation to the seat. (Such protective factors would be less if the driver were not aware of impending collision.) During the impact when the car is rapidly decelerating, his body tends to continue its forward motion, the upper portion tending to move forward faster than the lower part because of friction and bracing through the lower extremities. The amount of forward motion of the driver is determined by the amount of bracing and muscular response. If he is projected forward enough for his chest to strike the steering wheel, the pivot then would be entirely on the neck. A rider in the front seat of the car, if he is not anticipating the collision, would be projected forward against the nearest impediment—usually the dashboard—in the interior of the car, which he would strike with a velocity about equal to that of the car in which he was riding at the instant of impact, minus the mutual velocity at which the two cars had arrived before separating. Roughly, the velocity of the rider hitting against the dashboard would be about half that of the car in which he was riding when collision occurred.

The weights of the involved cars are also important factors and bear relationship to the degree of force impact. In general, if the car in motion is heavier than the stationary car, the stationary car will be forced to a greater velocity in relation to the velocity of the moving car, and consequently will have a greater acceleration than if it were heavier than the moving car. If the stationary car is the heavier, the converse is true.

The accompanying chart was made from data obtained from photographic timing correlated by mathematical equations. As revealed by the position of the head of the dummy in the car that was stationary and was struck from the rear, the first motion of the head on impact is backward and subsequently forward.

In these studies no attempt was made to correlate the degree of injury in relation to the velocity of impact. Experience in treating such injuries indicates they frequently occur in collisions in which the impact of collision was relatively light.

In an analysis of 40 consecutive cases of whiplash injuries, all of which were subjects of civil litigation, it is significant that in no instance in the series was it ascertained that an occupant of the car approaching from the rear received a cervical or whiplash injury. This can be explained by the precollision protective reflexes set in motion in the driver passengers. For the sake of clarity, the symptoms and objective findings in the 40 cases are discussed briefly under the following headings:

A. Number of patients who had immediate traction to neck, 2 (5 per cent).

Apparently immediate cervical traction, applied before muscular spasm occurs or soon after the onset of muscular spasm, appreciably decreased the

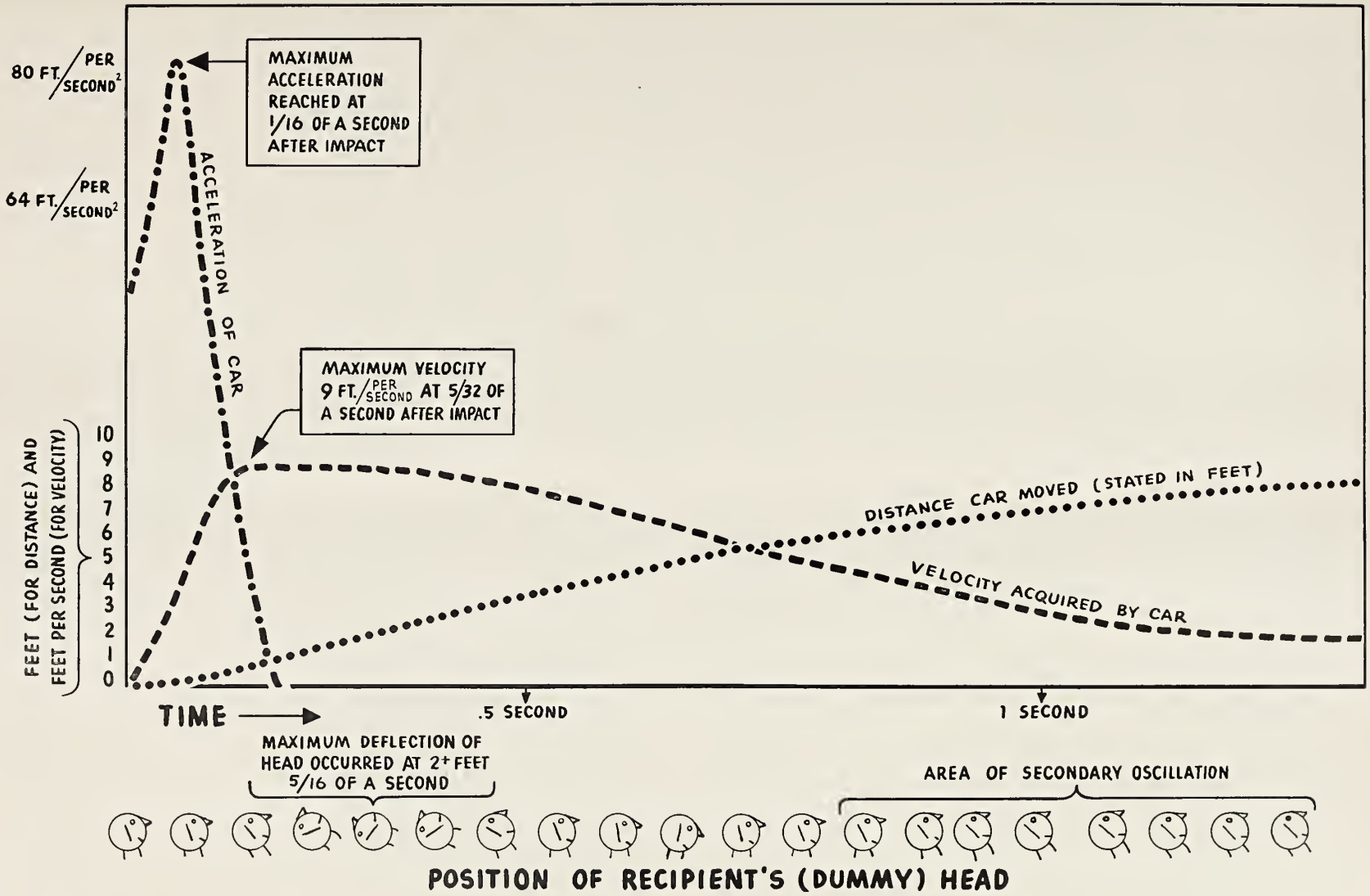

Chart A.—Data on the effect of impact on a stationary automobile struck from the rear by another automobile. The speed of the rearward car was 10 miles per hour (14.6 feet per second) at the moment of impact. In the stationary car the coil spring which supported the dummy's head had equal resistance to motion in the vertical planes.

recovery period and consistent relief from discomfort correlated the relaxation afforded by traction. In these cases of potential pain from whiplash injuries, the often associated symptomatology of headache, anxiety, personality changes, et cetera, did not develop, possibly because traction lessened the muscular contraction of the neck, increased the intervertebral spaces and to some extent also increased the aperture of the nerve root foramen, thus giving symptomatic relief and forfending the development of the cycle of secondary symptoms.

B. Number of cases in which application of traction or cervical collar was delayed, 20 (50 per cent).

There was apparently a relationship between emotional build-up and the lapse of time before cervical traction or a cervical collar was applied for relief of pain. It is believed that in such cases a good deal of emotional and anxiety apprehension could be avoided if the patient were thoroughly informed as to the problems of treatment and the pain, headaches and other symptoms to be anticipated, and as to the time needed for maximum recovery.

C. Number of whiplash cases in which there was associated cervical fracture, 1 (2.5 per cent).

In this instance the inferior articulating process of the fifth cervical vertebra was fractured. There was an associated fracture of the spinous processes of the sixth vertebra.

D. Number of patients who had immediate pain or radiating pain into either upper extremity or involvement of brachial plexus, 1 (2.5 per cent).

Number who had delayed radiating pain into either upper extremity or involvement of brachial plexus, 17 (42.5 per cent).

That immediate pain or radiating pain involving the upper extremities occurred in only one case in forty is indicative that the structure of the cervical neck is capable of withstanding sudden flexion and extension motions without primary nerve injury. In those cases in which there was delayed radiating pain into either upper extremity, the symptom was assumed to be produced by nerve root edema with impingement at the foramen orifice causing pressure on the nerve. This usually occurs in from 6 to 24 hours after the accident. Nerve root edema is theoretically decreased by immobilization, rest and traction.

In none of the 17 cases was there permanent paralysis involving the medial, radial or ulnar nerves. Six of the 17 patients had motor weakness with sensitory changes in the extremities, two had motor weakness without sensitory changes and four had sensitory changes without motor weakness. Five of the 17 patients had decreased hand compression strength (by Geckler dynamometer comparison with the uninvolved hand, with allowance made for difference between major and minor hand).

E. Number of proved disc injuries diagnosed by the author or by other physicians who examined some of the patients, none.

F. Number of patients who had associated arthritic changes of the cervical vertebra, 13 (32.5 per cent).

In these 13 cases an attempt was made to determine whether the whiplash injury exacerbated preexisting arthritic changes, using the following criteria:

1. Comparative x-ray films to determine changes beyond the usual ones to be anticipated over the time interval.

2. Repeated evaluation of the integrity of the patient in relation to the subjective complaints referable to arthritis.

3. Estimation of the force of the impact that caused the injury, the position of the patient at impact if determinable, the position of the patient immediately after impact and the position finally assumed—whether thrown free of the car or against the structure of the interior of the car.

The findings were inconclusive. In many cases there was no radiologically perceptible change, no impairment of the range of normal motion of the cervical vertebra and no increase or persistency of radicular pain.

G. Number of patients with associated concussion or commotio cerebri, 19 (47.5 per cent).

(a) Number with moderate concussion, dazed one hour or less, 17 (42.5 per cent).

(b) Number unconscious for one hour or more, 2 (5 per cent).

In the 17 cases of moderate concussion, vertigo and headache were the most prominent and persistent symptoms. Two of the 17 patients had systematized vertigo, which was considered to indicate that the system for control of balance and position was involved. The other 15 had nonsystematized vertigo which was considered a component of the postconcussional syndrome after examination to determine that it could not be validly attributed to organic disease elsewhere in the body.

H. Number of patients who had electroencephalogic changes indicative of trauma, 4 (10 per cent).

In this connection, question arises as to how long patients with positive electroencephalogic change must be observed, and by what methods examined, to be sure that sequelae will not develop. The answer

to this question must be given by those who are specialists in this field.

I. Number of cases in which caloric and hearing tests were used as a positive adjunct to diagnosis, 2 (5 per cent).

Caloric tests were found extremely valuable in diagnosis. They should be performed in all cases of whiplash injury in which the patient persistently complains of vertigo. In both cases in which these tests were done in the present series there was associated concussion.

J. Number of patients with objective palpable muscular spasm in neck independent of subjective complaints, 18 (45 per cent).

A routine procedure was followed in palpating muscular spasm referable to the neck. Light and firm palpation was repeated while the attention of the patient was distracted. There was a direct positive relation of the degree of spasm to the ability of the person examined to particularize this subjective complaint. Muscular spasm must be ascertained with the patient both upright and recumbent.

K. Number of patients subconsciously or consciously exaggerating the subjective symptoms referable to neck, 5 (12.5 per cent).

It is the author's opinion that five patients definitely exaggerated the subjective symptoms. The minor exaggerations referable to subjective symptoms in many cases were disregarded and are not included here.

L. Number of patients complaining of headache, 22 (55 per cent).

Before attributing headache to a whiplash injury, full consideration must be given to other possible causes—neuralgic, allergic and tensive, for example. Muscular spasm, if present, is almost invariably accompanied by headache. Myofascitis of the cervical structures, periarthritis and arthritis are all capable of producing various degrees of headache. Determining whether or not it is related to the whiplash injury may be difficult.

M. Number of patients who had emotional disturbance, 9 (22.5 per cent).

The emotional disturbances which accompany whiplash injuries have been described in detail by numerous neurologists and neuropsychiatrists. From their experience and writings it is well authenticated that the emotional disturbance is a component of the postconcussional syndrome.

N. Number who had cervical dislocations, 1 (2.5 per cent).

It is quite conceivable and theoretically sound that patients receiving moderate or severe whiplash injury could have partial dislocation of the cervical vertebra, and then immediate and spontaneous reduction. So far as could be determined in the present series there was no way by which to determine the degree of force in a specific case and the relationship of the force to the production of dislocation. In considering the possibility of spontaneous reduction of cervical dislocation occurring before radiological studies can be made, it would be expected in such cases that the symptoms might be persistent and objective findings more prolonged than in cases of minimal or moderate injury at the site of ligamentous and fascial attachment.

It is quite apparent from the physical factors involved, both as to the force of impact and the structure of the individual, that there is ground for a wide diversity of opinion among medical examiners in evaluating the injury from a legal standpoint. The admitted medical unknowns create a fertile field for litigation as applicable to whiplash injuries. It follows that the medical examiner in such cases should convey in reports and, when necessary, in testimony, direct and unbiased opinions based upon proved substantiated medical knowns from a structural and physiological standpoint. Only by so doing can a reasonable degree of certainty be obtained.

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Traumatic Hemopneumothorax in the Minor Pulmonary Fissure

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• **Traumatic rupture of the visceral pleura lining the minor pulmonary fissure may produce encapsulated hemopneumothorax limited to the space between the right upper and middle lobes.**

This lesion, which may persist for several weeks, may be differentiated from cystic pulmonary lesions and from lung abscess by its radiologically demonstrated constant and intimate symmetrical relation to the plane of the minor fissure.

THE OCCURRENCE of isolated collections of fluid or blood in the interlobar pulmonary fissures is well known.[2-6] The principles of radiologic differentiation of these interlobar collections from the intrapulmonary lesions they so often simulate have been well worked out and are now generally recognized.[2,7] When the fluid is limited to the minor fissure, differentiation from parenchymal lesions of adjacent segments of the middle and upper lobe may be troublesome, but with the aid of fluoroscopically-selected oblique views, and laminagraphy, the differentiation can usually be made.

However, the occurrence of a related and equally deceptive lesion, hemopneumothorax in the minor fissure, the result of trauma, has not been generally recognized and so far as could be determined, has not been described previously. It is the purpose of this paper to report three cases of such lesions and to enumerate the features by which the condition may be differentiated from lung abscess and from communicating lung cyst.

CLINICAL FEATURES

The three patients were young men, ages 21 to 30, each of whom incurred, in an automobile accident, a chest injury severe enough to fracture one or more of the upper four ribs. In two, the rib fractures were on the right, but in the third, the rib fractures were on the left side only. Two of the patients had immediate hemoptysis, and two showed subcutaneous emphysema. One had associated right general pneumothorax and pleural effusion, while the patient with the rib fractures on the left side had general pneumothorax on that side.

In each patient, an x-ray film of the chest, taken from one and one-half hours to three days after injury, showed an oval lesion, with air-fluid level, deep in the midportion of the right lung field.

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Presented before the Section on Radiology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

REPORTS OF CASES

CASE 1. A 30-year-old dentist with no previous history of chest disease was struck on the chest in an automobile accident. He promptly coughed blood, and felt severe inspiratory chest pain. Survey x-ray films one and one-half hours after injury showed an oval cavity, interpreted as a "lung cyst" with fluid and gas, in the right midlung field.

More complete x-ray studies four days later (Herrick Memorial Hospital) showed minute fractures of the right third and fourth ribs, and separation of the right first costochondral junction. A 2 × 6 cm. oval lesion (Figure 1) containing air and fluid was seen in the right midlung field. The posterior borders of the lesion coincided exactly with the position of the posterior portion of the minor pulmonary fissure as shown on the routine lateral films of the chest taken previously. Fluoroscopy showed the fluid freely movable within the cavity. Lateral laminagrams showed the lesion merging anteriorly into the line of the minor pulmonary fissure; posteriorly, by a small dense triangle, into the junction of minor and major fissures (Figure 2).

Two weeks after injury the fluid had almost disappeared and the cavity had shrunk to a 2 cm. gas pocket. After one month, there was only a residual slight thickening of the minor fissure. At last report patient was well and working.

CASE 2. A 21-year-old mechanic, with no history of previous chest disease, fell out of a truck as it turned over, breaking his left scapula and clavicle and the top three ribs on the left. The patient, when questioned later, did not recall spitting blood, but he had been briefly unconscious. X-ray films taken shortly after the injury showed left pneumothorax and left subcutaneous emphysema, but no right pneumothorax or fluid was noted (films not available for review). Three days after injury, a cavity

Figure 1 (Case 1).—Upright films of the chest, four days after injury, showing the air-and-fluid collection in the minor interlobar fissure. *Left:* Postero-anterior projection. *Center:* Right lateral projection. *Right:* Left anterior oblique projection (Bucky) of right midlung field.

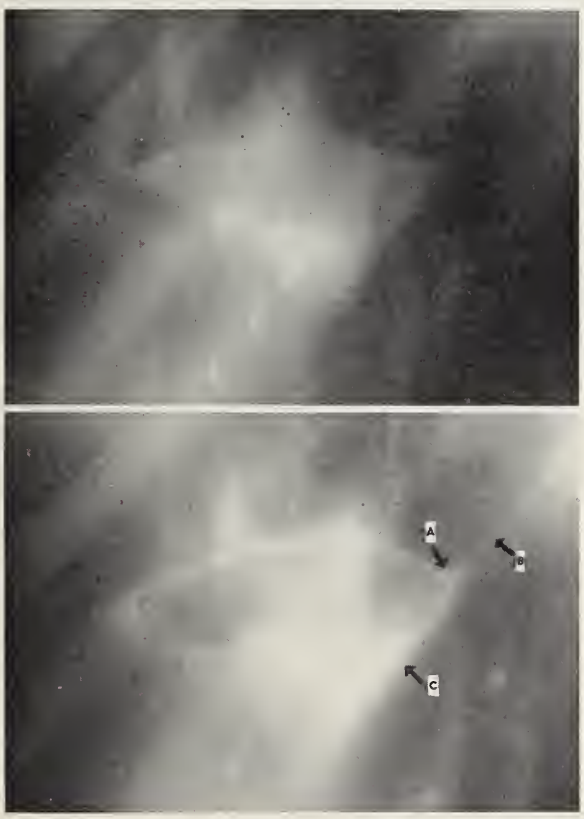

Figure 2 (Case 1).—Lateral laminagrams, right decubitus of right midlung field five days after injury. Note the triangular density posteriorly as the lesion reaches the major interlobar fissure. *Above:* Section taken below fluid level. *Below:* Section taken just above fluid level, in air-containing portion of lesion. Arrow *A* points to triangular density. Arrows *B* and *C* point to major interlobar fissure.

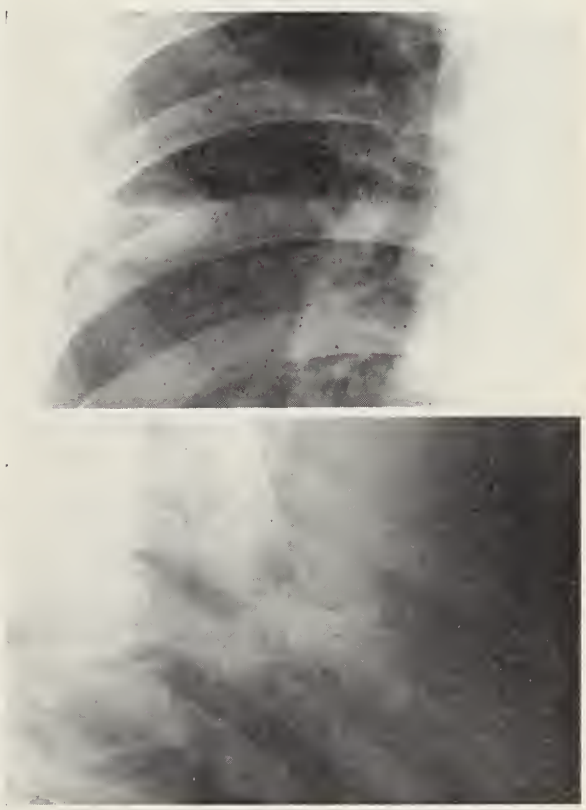

Figure 3 (Case 2).—Upright films of the right midlung field, 16 days after injury, showing air-fluid collection in the minor interlobar fissure. *Above:* Postero-anterior projection. *Below:* Lateral projection.

was seen in the right lung field and the patient was admitted to Peralta Hospital with a provisional diagnosis of "lung abscess."

Figure 3, taken ten days after injury, shows the fluid collection with the air bubble above it; it measured 7 cm. in the lateral view but only 4.5 cm. in the postero-anterior projection. In the lateral view, the lesion blended into the posterior end of the minor fissure by a small dense triangle. Repeated attempts at bronchoscopic aspiration failed to empty the cavity. On the 27th day, needle aspiration through the chest wall was carried out under fluoroscopic guidance and 5 cc. of bloody fluid and gas was withdrawn. Films taken immediately afterward showed the lesion much smaller. The patient was

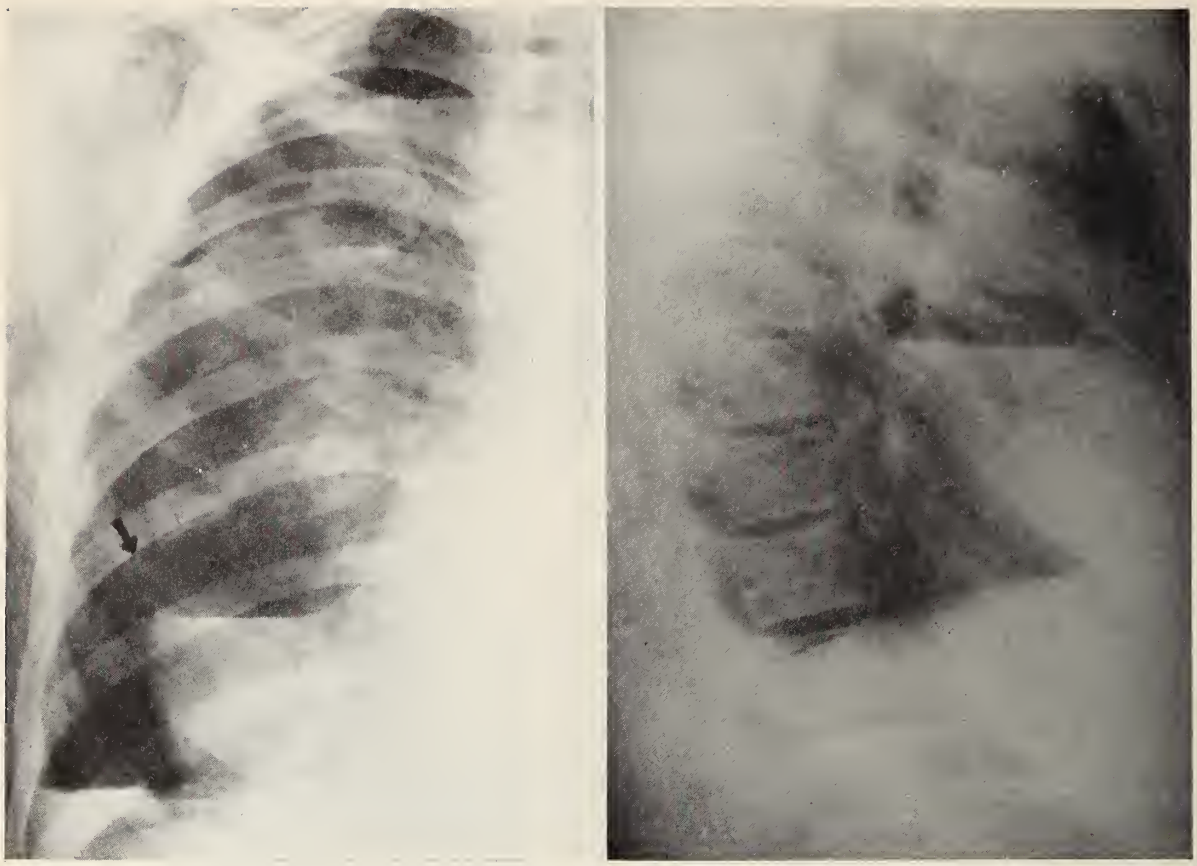

Figure 4 (Case 3).—*Left:* Upright film of the right hemithorax one day after injury, showing air-and-fluid collection in the minor interlobar fissure, air and fluid in the right pleural cavity, and interstitial emphysema of chest wall and axilla. Arrow points to bulging thin line, presumably visceral pleura. *Right:* Upright right lateral projection, one day after injury, showing air and fluid in minor fissure and smaller collection of air and fluid above.

discharged on the 30th day. Seven weeks after injury, fluoroscopy showed only some thickened pleura. Thereafter the patient was well and working.

Case 3. A 21-year-old hospital orderly with no previous history of chest disease struck the right side of his chest against the steering wheel in an automobile accident. There was prompt hemoptysis. On admission of the patient to San Francisco Hospital, x-ray films taken 11 hours after injury showed fractures of the right first to fourth ribs, subcutaneous emphysema and right pneumothorax with a small collection of fluid over the diaphragm. An additional air-fluid level, 6 cm. in length in the postero-anterior view, occupied the position of the posterior portion of the minor fissure and reached the visceral pleura laterally. There a thin curved hair-line density, bulging laterally into the general pneumothorax space, apparently was the visceral pleura layer (Figure 4, *left*). In the lateral view, the characteristic dense posterior triangle was formed as the converging surfaces of the minor fissure joined the major fissure (Figure 4, *right*). An additional small fluid level, 6 cm. higher, probably represented a pool of fluid or blood caught on a band of pleural adhesions. Upon thoracentesis on the fourth day 550 cc. of bloody fluid and 450 cc. of gas were removed. The patient was discharged on the tenth day. In six weeks the pneumothorax had almost completely disappeared.

PATHOGENESIS

The pathogenesis of the minor fissure hemopneumothorax, in the absence of a surgically-explored patient, must remain speculative. As distinct from many kinds of general pneumothorax this lesion cannot be ascribed to perforation of the visceral pleura by a jagged end of a fractured rib. In one of the three patients, herein reported upon, there were no rib fractures on the right side, and in the other two the rib fractures did not reach as low as the level of the minor fissure. One would be led to postulate, instead, that the lesion arose from a bursting or tearing of the visceral pleura lining the minor fissure, with escape of air and blood into the minor fissure space. In discussing the mode of development of interlobar effusion, Rigler[6] noted that a similar method, direct extension from the lung parenchyma through the visceral pleura lining the fissure, occurs in some inflammatory processes.

The subsequent persistence of the limitation of the air-and-blood collection to the minor fissure, without escape into the general pleural cavity, must be owing to previous peripheral sealing. Inflammatory sealing of the edges of the minor fissure (as may have occurred in Case 3 herein reported) must be relatively rare. However, in routine postmortem examinations, it is not uncommon to find an obliteration of the general pleural cavity which has not extended deep into the minor fissure, thus leaving the fissure as a free potential space.[1] Such a mechanism may well be the explanation of the limitation of the air-fluid collection to the minor fissure in Cases 1 and 2. If this explanation is correct, one would predict that similar traumatic air-and-fluid collections may be found in other fissures as well.

DIAGNOSIS

This lesion has shown itself to represent a diagnostic pitfall. In Case 1, the patient was presented with a previous x-ray impression of "lung cyst"; in Case 2, the patient was presented as having a "lung abscess." Factors which may lead to diagnostic error include, first, unfamiliarity with the existence of the lesion. The occurrence of an air-fluid level deep in the lung substance, apparently surrounded on all sides by lung parenchyma, and the localization to the posterior portion of the fissure, which extends well posterior to the hilum, also tend to confuse the picture. Finally, the persistence of the lesion over several weeks in relatively stable form increases the possibility of misinterpretation.

Once the lesion has been thought of, the diagnosis is relatively simple. The history of recent chest injury, perhaps with hemoptysis or rib fracture, followed by the discovery of an oval or spindle-shaped air-fluid collection in the plane of the minor fissure, should lead to careful examination of the relation of the edges of the lesion to the recognizable position, if any, of the minor fissure. Two details of the appearance of the borders may be helpful. First, the posterior extremity of the lesion, in the lateral view, consists of a small dense triangle, symmetrically placed on and merging into, the posterior extremity of the minor fissure, at its junction with the major pulmonary fissure. Anteriorly, the lesion merges into the minor fissure by a long pointed lanceolate density. Second, the sharp outline of the gas-pleural surface superiorly contrasts with the hazy merging of the lower border of the fluid collection with the compressed or contused lung immediately below. Laminagraphy is helpful in showing some detail, but conventional views well exposed are likely to afford sufficient detail for diagnosis.

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The Surgical Treatment of Arteriosclerotic Occlusive Disease

Thromboendarterectomy in Selected Cases

CHARLES A. KRUSE, *M.D.*, and FREDERICK G. KIRBY, *M.D.*, Santa Monica

• **Thromboendarterectomy appears to be the procedure of choice in the surgical treatment of localized obstructive arteriosclerosis in the aortoiliac area in a relatively young patient.**

Clinical follow-up over a three-year period demonstrated maintenance of a maximum benefit and suggested that the endarterectomized area will remain patent for the duration of the patient's life.

In younger patients, it seems logical to reestablish vascular continuity with their own tissues by a careful endarterectomy rather than by homograft replacement because of the reported incidence of late thrombosis in the latter.

"Diffuse" arteriosclerosis definitely limits the potential benefit or effectiveness of thromboendarterectomy. However, lumbar sympathectomy may still bring about definite benefit in particular cases.

The careful selection of patients with localized or segmental arteriosclerosis and well developed collateral circulation would seem to be the greatest factor in obtaining a maximum result by thromboendarterectomy.

There is an increasing acceptance of the direct surgical treatment of obstructive arteriosclerosis, which fortunately is often segmental with a patent vessel above and below the diseased area. Because of this pathologic feature two methods—thromboendarterectomy or resection and replacement of the obstructed segment by a suitable vascular graft—have both been successfully used to restore normal circulation in the peripheral bed.[1,4,9,13,14,17-19,21-26] More recently a third method—"by-passing" the diseased area with a homograft—suggests certain advantages.[5,6] Which of these methods is superior awaits further clinical experience. Homograft (arterial) replacement in the treatment of aortic aneurysms seems well established[7,20] and it has been used rather extensively in femoral arteriosclerotic occlusions.[12,13,21,22] However, there may be an increasing tendency to utilize thromboendarterectomy for segmental occlusive disease of the lower aorta or the iliac arteries.[4,8,10,27]

In arteriosclerosis, thromboendarterectomy is possible because of a pathological cleavage plane within the media. The accumulation of cholesterol, fatty acid salts and tissue debris creates a line of separation between the relatively uninvolved outer coat and the diseased intima of the artery.[10,25] Gradual narrowing of the arterial lumen by the accumulation often leads to complete occlusion.

DISCUSSION AND CLINICAL OBSERVATIONS

Proper selection of the patient may be the major factor in determining a successful result. Localized segmental arterial thrombosis in a relatively young patient is a lesion in which an excellent result can be obtained by thromboendarterectomy.[14]

This is illustrated by the case of a 46-year-old man who for eight months had had symptoms of right thigh and hip claudication after walking 100 to 150 feet or on climbing 8 to 10 steps. A preoperative aortogram (Figure 1) showed occlusion of the right common iliac artery but fairly good filling of the femoral artery distally due to well developed collateral circulation. Thromboendarterectomy resulted in the immediate return of bounding peripheral pulses (Table 1). Oscillometric indices (Table 2) of the ischemic leg became equal to those of the opposite or "normal" leg. The surgical procedure and a postoperative aortogram are shown in Figure 1. Sympathectomy was not done. Four months after operation, without the permission of the physician, the patient decided to go deer hunting. He was able

TABLE 1.—*Peripheral Pulsations [Graded on Basis of 1 to 4] in Case of 46-Year-Old Man Before and After Thromboendarterectomy*

	Femoral	Posterior Tibial	Dorsalis Pedis
Right (before operation) *..	1	Questionable	Questionable
Right (after operation) †....	4	4	4
Left (before and after operation) *†	4	4	4

*April 10, 1953.
†April 18, 1955.
Note: At examination three years after operation there was no significant change from the above findings.

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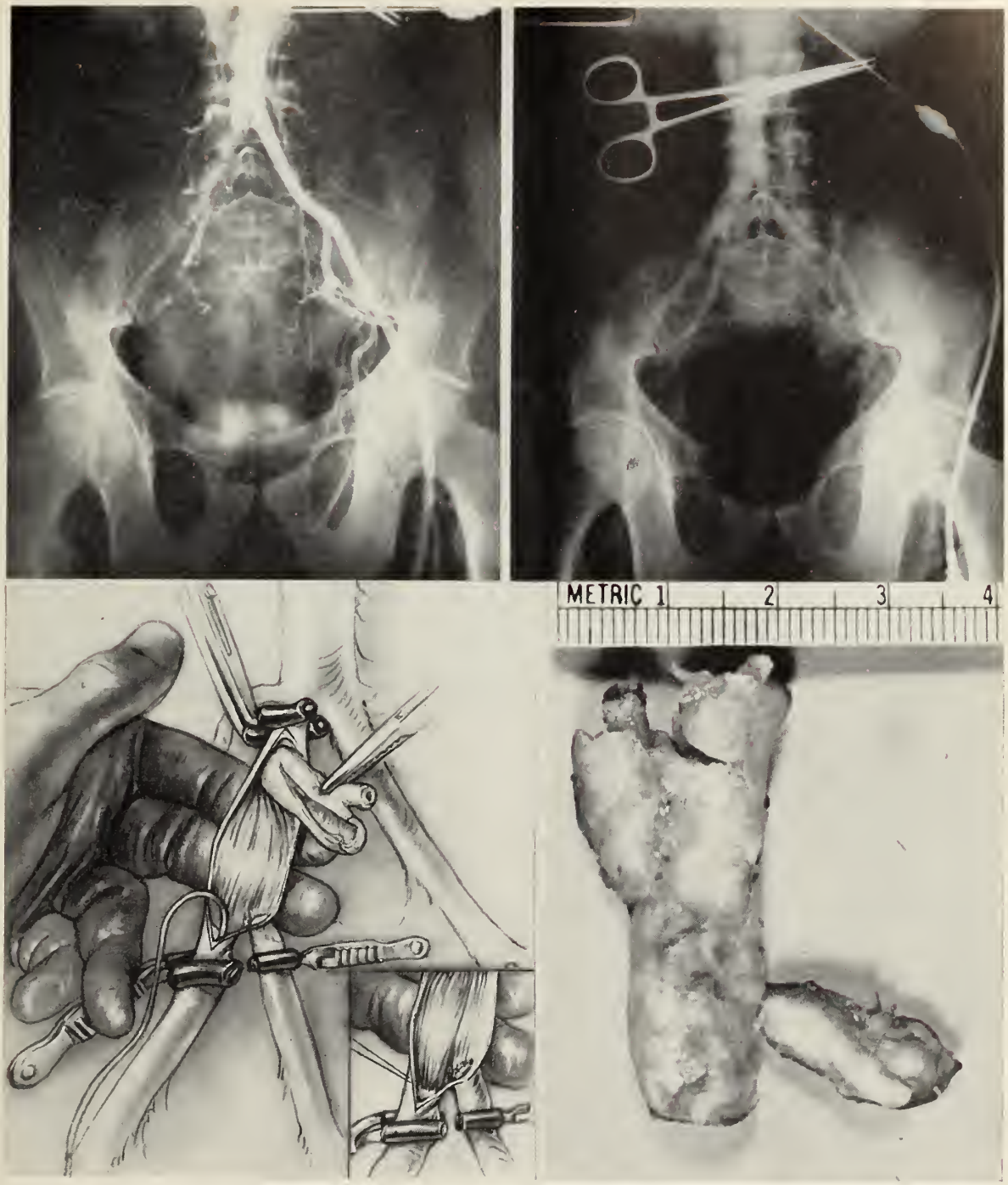

Figure 1.—*Upper left:* Preoperative aortogram showing occlusion of right common iliac artery but with fairly good filling of the femoral artery distally due to well developed collateral circulation. *Upper right:* Aortogram done three months postoperatively, showing widely patent right common iliac endarterectomized area. Note filling of right femoral artery. *Lower left:* Drawing illustrates surgical procedure in more detail. A large collateral lumbar artery is just proximal to the Blalock clamp. Note polyethylene catheter supplying heparin into distal arterial tree. An important step is the anchoring of the distal cut edge of the intima (see insert). *Lower right:* Posterior view of specimen removed from right common iliac artery and origin of right hypogastric artery. The pathological cleavage plane is well illustrated by this posterior view of the arteriosclerotic process.

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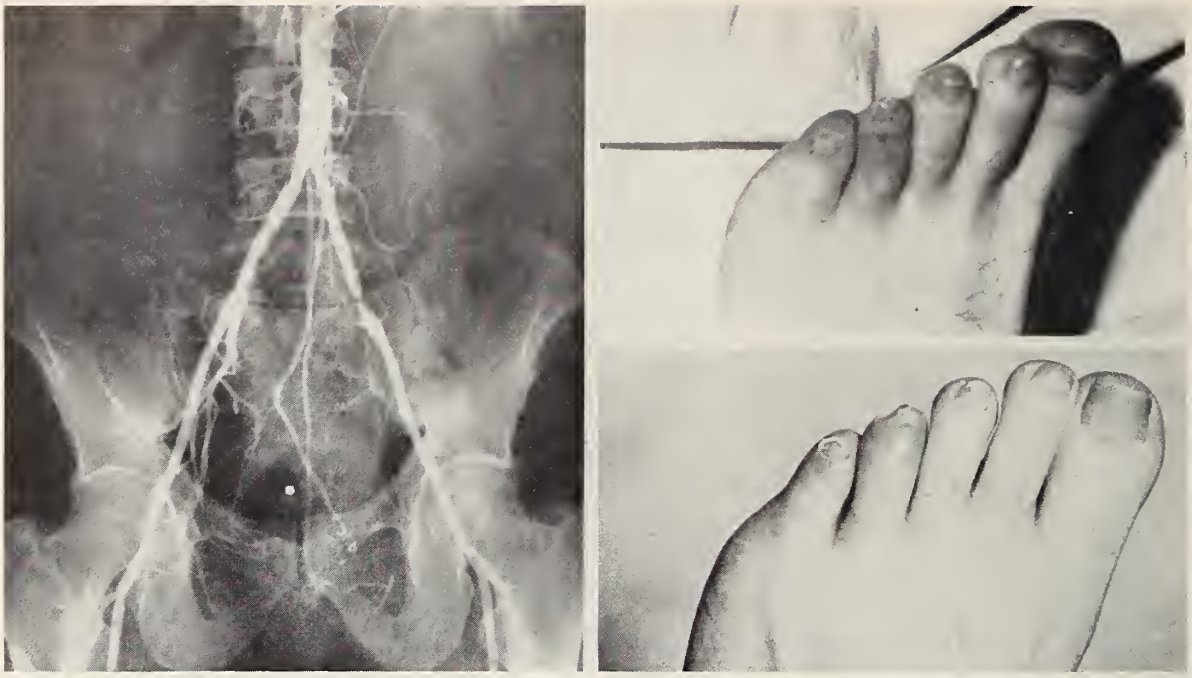

Figure 2.—*Left:* Preoperative aortogram showing a slightly narrowed terminal aorta with a left common iliac obstruction at the level of the hypogastric artery take-off. Distal filling is fairly good but the left hypogastric artery is barely visible. *Upper right:* Photograph of left foot showing "line of demarcation" or color change of distal 4th and 5th toes. Some cyanosis of the tip of the great toe was also present. *Lower right:* Same foot eleven weeks after endarterectomy of left common iliac artery. The "line of demarcation" or color change has almost disappeared. Necrotic soft tissues of the tip of the 4th toe along with the toenail have separated from the distal segment in the healing process.

to walk along mountain trails and to pack a deer on his shoulders down a mountain to camp. Three years after operation he regularly walked a mile to work without discomfort and appeared to be maintaining the maximum benefit.

The best indication for endarterectomy appears to be localized obstructive arteriosclerosis in the aorto-iliac area in a relatively young patient. This concept would tend to avoid the use of endarterectomy in patients of the older age group (60 and above) and in persons with so-called "diffuse" arteriosclerosis. The early diagnosis of the Leriche[15,16] syndrome, when it initially involves only one common iliac artery, is the more ideal situation and safer to treat surgically from the point of technique. If, after endarterectomy, reocclusion should occur in a previously obstructed segment, the patient's distal circulation will probably be no worse due to the already well developed collateral circulation.[18] Ischemic lesions of the nerves and muscles of the less involved limb with poorly developed collateral circulation have been noted following clamping of the aorta.[4] Therefore if arterial obliterative disease of one common iliac artery is the cause of the complaint, with only partial involvement (or stenosis) of the opposite arterial tree, then perhaps it is better judgment to attack only the major side at one time, and stage the procedure so that a second operation,

TABLE 2.—*Oscillometric Index in Case of 46-Year-Old Man Before and After Thromboendarterectomy*

	Pressure of Cuff (mm. mercury)		
	120	100	80
	—Units of Oscillation on Dial—		
Right mid-thigh (before operation) *	¾	¾	¾
Right mid-thigh (after operation) †	2½	3	2½
Right mid-calf (before operation) *	2	2	2
Right mid-calf (after operation) †	4½	6½	7
Right ankle (before operation) *	Trace	Trace	Trace
Right ankle (after operation) †	3	3½	3½
Left mid-thigh (before and after operation) *†	2½	4½	2½
Left mid-calf (before and after operation) *†	6	8	9
Left ankle (before and after operation) *†	2½	3½	3½

*April 10, 1953.

†April 18, 1955.

Note: At examination three years after operation there was no significant change from the above findings.

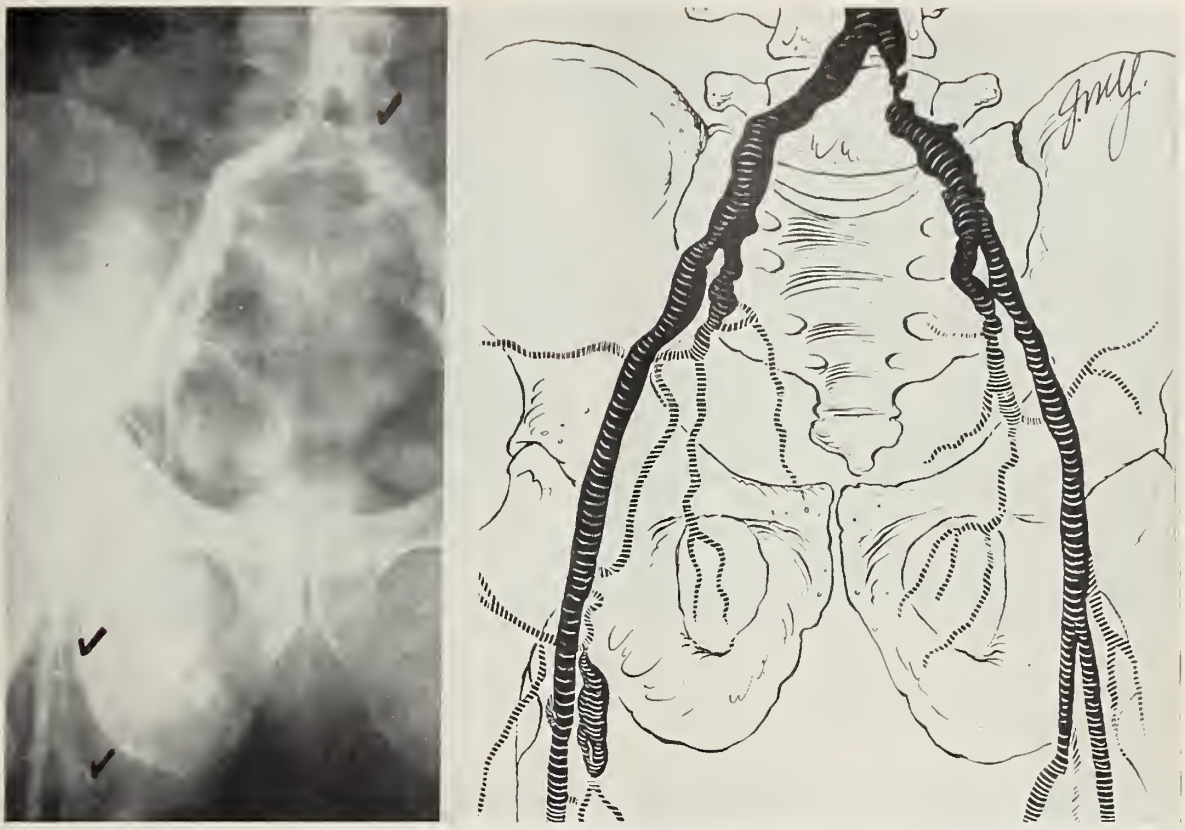

Figure 3.—*Left:* Aortogram showing occlusion of the right superficial femoral artery and pronounced calcification of the bifurcation of the terminal aorta with left common iliac artery stenosis. *Right:* Tracing to clarify aortogram.

if necessary on the basis of persisting or progressive symptoms on the opposite side, can be done later.

This clinical situation is exemplified by the case of a 40-year-old man who for a year and a half had had claudication in the left thigh after walking 100 to 150 feet and for two months had had almost continuous severe pain in the left fourth and fifth toes. The toes had been injured four years previously by a weight falling on them. A preoperative aortogram (Figure 2) showed a slightly narrowed terminal aorta with a left common iliac obstruction at the level at which the hypogastric artery branches from it. There was an absence of left femoral and pedal pulses although fair filling distally was noted on the aortogram. Endarterectomy of the common iliac artery and its bifurcation resulted in return of strong left femoral and pedal pulses. Symptoms were relieved immediately and the "line of demarcation" or color change of the two toes moved distally (Figure 2). Residual local (arteriolar) damage from the old injury still existed in the toes, however. Future arteriosclerotic changes in the terminal aorta or the right iliac vessels that produce symptoms may warrant surgical intervention in later years. However, the patient, after hospitalization of a week and a short convalescent period, returned to doing heavy work. It seems more logical to treat such an area in a relatively young patient by endarterectomy (leaving his own tissues to form the new vascular channel) rather than to resect the obstructed segment and replace it by a homograft (with the possible sequelae of degeneration and blow-out or late thrombosis of the graft[12,20]).

The advisability of extensive endarterectomy for obstructive femoral arteriosclerosis, as against reestablishing the vascular channel by a suitable graft, must be evaluated by further follow-up studies,[8,10,12,20,21,22] although Cannon and Barker recently reported encouraging results with endarterectomy in selected cases.[3] Crawford and DeBakey's recent presentation of the "by-pass operation" suggests distinct advantages over extensive endarterectomy or excision and replacement of the occluded artery by homograft in the superficial femoral area. This simpler procedure usually restores a normal pulsatile blood flow into a (patent) peripheral arterial bed and requires only minimal disturbance of the main artery and its collateral vessels adjacent to the region of occlusion (thereby causing only minimal jeopardy to the existing circulatory and functional capacity of the extremity).[5] However, Hoye and Warren[12] reported that at the time of ex-

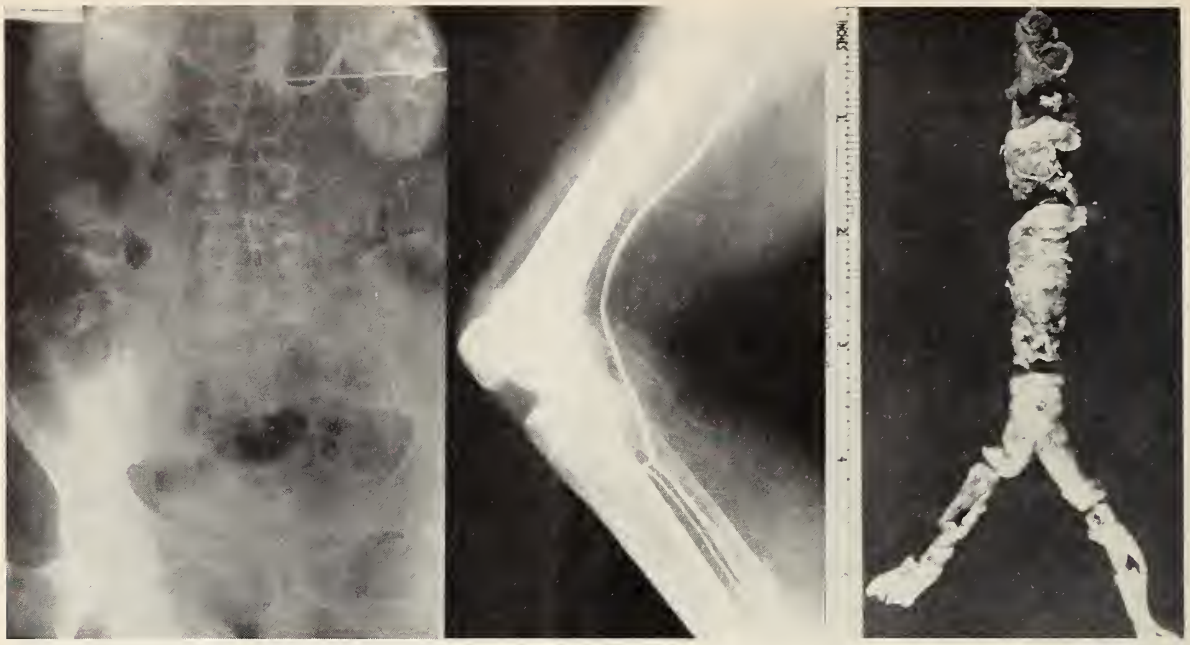

Figure 4.—*Left:* Preoperative aortogram showing complete occlusion of aorta at level of renal arteries. *Center:* Right femoral arteriogram in same patient showing patent distal vessels. *Right:* Specimen removed from aorta (extending into the external iliac arteries). Note the oblique proximal end of the thrombus corresponding to the aortogram configuration at the level of the left renal artery.

Figure 5.—*Left:* Arteriogram showing obstruction of right superficial femoral artery in 67-year-old woman. Note "moth-eaten" appearance (diffuse arteriosclerosis) of the popliteal artery. The tracing further illustrates areas of diffuse arteriosclerosis.

amination six months after operation approximately 70 per cent of homografts to the iliofemoral area were observed to be occluded. In two other cases closure occurred at one year and two and one-half years. No definite correlation of factors—type of anastomosis (end-to-end or end-to-side), age of patient, length of graft, pulse return within 24 hours, adequacy of the "run-off" area, etc.—could be made for predicting long-term patency or possible thrombosis by 6 to 7 months. Distal operative angiography is often essential to determine the patency of the popliteal artery and the system beyond before any femoral procedure[2,3,5] is carried out.

Experience with a 55-year-old man having occlusion of the superficial femoral artery on the right side in addition to pronounced arteriosclerosis of the bifurcation of the terminal aorta and calcification on x-ray with left common iliac artery stenosis (Figure 3) exemplified the salient observations of Wylie and Gardner[27] that (1) occlusions of the superficial femoral arteries tend to be long, extending from the profunda femoris to the popliteal artery; (2) that, with occlusion at the femoral level, arteriosclerotic changes both proximal and distal to the occluded segment are frequent. (Extensive femoral endarterectomy in this case improved the right leg so that warmth, function and oscillometric reading were equal to or slightly better than those in the opposite extremity; but pedal pulses were not restored and there was no pronounced benefit.) Wylie and Gardner suggested that occlusions in the aorta, iliac arteries and even the common femoral arteries tend to remain localized to a short arterial segment because of the short distance between larger arterial branches and the size of these branches.

The case of a 64-year-old woman with claudication of both thighs of seven years' duration, illustrates this later statement. Preoperative aortogram (Figure 4) showed complete occlusion of the aorta at the level of the renal arteries. A right femoral arteriogram showed a small but patent femoral artery. After endarterectomy the feet were warm and there were bounding left femoral and pedal pulses and small right femoral and pedal pulses. Oscillometric readings correlated with the findings, having been zero or absent prior to this "near-maximal" application of endarterectomy. The patient was walking without claudication when last observed, nine months after operation. It is admitted that resection and replacement by homograft of the occluded area of this extent and in this age group may offer certain technical advantages over endarterectomy.

In diffuse arteriosclerosis when there is definite risk of distal arterial thrombosis and ultimate loss of limb, it is probably best to settle for lumbar sympathectomy, although it is recognized that this merely warms the feet and improves the color in a favorable case without materially improving the claudication. Figure 5 shows obstruction of the right superficial femoral artery in a 67-year-old woman in whom the popliteal artery had a "moth-eaten" appearance (diffuse arteriosclerosis). After lumbar sympathectomy the foot was remarkably warm and pink. Claudication was no longer a serious complaint.

Lower thoracic and lumbar sympathectomy for obliterative disease of the lower aorta or the iliac arteries has been reported as giving satisfactory results during a five-year follow-up period—so far as satisfaction of the patient and warmth of limb was concerned (but poor as judged by incidence of relief of claudication or improvement of oscillometric findings).[11] The addition of lumbar sympathectomy to any endarterectomy (or homograft) procedure in which immediate return of good peripheral pulses is not obtained seems advisable.

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***Discussion by* WILEY F. BARKER, *M.D.*, Los Angeles**

In this presentation Dr. Kruse has exhibited a generally sound understanding of the principles of the surgical management of atherosclerotic obstructions in the peripheral arteries. Try as I might I could find no point of major disagreement, and therefore I would like to supplement another portion of Dr. Kruse's presentation.

I am sure that some of the audience are wondering just why we talk so much about endarterectomy as therapy for this disease, instead of discussing the use of homografts which has been given so much attention in print recently. As a result of experience with approximately 125 cases in which endarterectomy was performed and ten cases in which homografts were used for obstructive atherosclerosis, I believe that endarterectomy is usually the operation of choice. In certain circumstances, the use of grafts may have merit as a lesser undertaking for a patient with diffuse and extensive atherosclerosis who is a poor operative risk. In the younger patients, however, in whom a full and long-lasting rehabilitation can be expected, as in Dr. Kruse's first case, I favor endarterectomy for the following reasons:

1. Using a prosthesis inevitably involves the implantation of a biologic or plastic foreign body of considerable size.

2. The initial failures of both grafting and endarterectomy usually result from not extending the limits of the operative field above and below the segmental obstruction and thus neglecting to provide either an adequate in-put or a proper run-off of blood. I believe, however, that I have been able to perform endarterectomy in all circumstances in which a graft might have been successful and, at the same time, that an adequate flow was restored in some circumstances in which a graft alone without supplemental endarterectomy would certainly have failed.

3. Many investigators are now admitting late failures in the femoral artery grafts. For example, Dr. Kruse's quotation of Warren's figures of 70 per cent at six months. In approximately 100 follow-up studies, some extending as long as four and one-half years, of patients in whom flow was obtained during the early postoperative period, I have seen only one instance of late thrombosis in the segment operated upon.

4. We now have anatomic and radiologic evidence that endarterectomy reestablishes the blood flow from the main line into collateral vessels, and thus restores a more nearly physiological perfusion system than does a graft, which is, in essence, a simple shunt. The reconstitution of an adequate flow of blood may be the reason for resistance to late thrombosis.

Injuries Caused by Motor Vehicles

A Statistical Analysis

MILFORD X. ANDERSON, M.D., Los Angeles

• In an analysis of 6,024 injuries in 1,865 persons hurt or killed in traffic accidents, it was noted that the incidence of injuries to the head and lower extremities was 32 per cent in each instance. Twenty-five per cent of all fractures involved the head.

In the first 55 years of this century, 1,149,414 persons in the United States died in highway accidents. In all the wars of this nation in the 180 years of its existence, only 1,130,393 men were killed.

In 1955[1] motor vehicle accidents took about 38,500 lives in the United States—about 2,500 more than in the preceding year and the highest number in 14 years. However, on the basis of miles traveled, the 1955 rate was about the same as that of the previous year. Each year 100,000 persons are permanently injured and another 1,200,000 are temporarily disabled as a result of traffic accidents.

Motor vehicles cause more than two-fifths of the total number of deaths that occur in all kinds of accidents and a far greater number than any other kind of accident.[2] For every person killed by a motor vehicle, about 35 are disabled, temporarily or permanently.

Among males in early life, more than one-half of all accidental deaths are caused by the automobile.[2]

Between eight hundred and a thousand deaths a year result from injuries to drivers and passengers of motorcycles involved in accidents.[3]

A few deaths occur among bicycle riders.

Recent stress on measures to prevent injury to both pedestrian and motor vehicle occupants seems to necessitate a close study to determine the nature, location and types of injuries in order to develop better preventive measures.

The National Safety Council[4] reported that in 1949, 18 per cent of all drivers involved in fatal accidents had been drinking, compared with 17 per cent in 1950. Drivers under the "influence of alcohol" were reported in 8 per cent of all fatal cases in both 1949 and 1950.

Commissioner Donald S. Leonard of the Michigan State Police[4] stated that "there is good evidence that one-third of drivers involved in accidents resulting in personal injuries are under the influence of alcohol." The Northwestern University Traffic Institute showed that nearly one-half of the drivers involved in accidents had been drinking.

Submitted May 14, 1956.

MATERIAL AND METHODS

In the year 1955 there were 15,763 persons admitted to the Lincoln Heights branch of the Los Angeles receiving hospitals, 1,865 (12 per cent) of them because of injury in automobile accidents (Table 1). These patients constitute the material used in this study. Two hundred and seventy-eight were pedestrians and 1,587 were vehicle passengers. Fifteen patients were killed immediately or died very shortly after arriving at the emergency hospital and 338 persons were hospitalized for further care.

Almost 20 per cent of the persons in the present study who were injured enough to require medical care had been drinking. This figure is low compared to data in other series, for at the Lincoln

TABLE 1.—*Data on Persons Received at Lincoln Heights Receiving Hospital After Injury in Traffic Accidents*

Total patients treated at Lincoln Heights Receiving Hospital in one year, 1955		15,763
Total involved in traffic accidents		1,865
Passengers	1,587	
Pedestrians	278	
Dead on arrival or died in receiving hospital		15
Hospitalized for further care		338
Private hospitals	169	
County hospital	169	
Major injuries	352	
Minor injuries	1,513	
	1,865	

TABLE 2.—*Incidence of Drinking in Persons Injured in Traffic Accidents*

H.B.D.*	97
H.B.D., 1 plus	50
H.B.D., 2 plus	124
H.B.D., 3 plus	98
H.B.D., 4 plus	21
Total	390

*Had been drinking.

TABLE 3.—*Classification of Cases in Which Persons in Traffic Accidents Had Ingested Alcohol Previously**

Classification	Gm. of Alcohol Per Kilogram of Brain	Percentage of Alcohol in Brain	Physiologic Effect
Trace	0.050 to 0.200	0.005 to 0.02	Normal
1 plus	0.200 to 1.000	0.02 to 0.10	Normal
Low 2 plus	1.000 to 1.500	0.10 to 0.15	Affected stage; may or may not be intoxicated
High 2 plus	1.500 to 2.500	0.15 to 0.25	Intoxicated
3 plus	2.500 to 4.000	0.25 to 0.40	Loss of equilibrium; intoxicated
4 plus	4.000 to 6.000	0.40 to 0.60	Unbalanced; intoxicated

*Courtesy of William C. Wilentz, M.D. (Am. Pract. and Digest of Treatment 4:22, January, 1953).

Heights hospital patients with head injuries are usually not listed as "had been drinking" (H.B.D.) because it is hard to differentiate which symptoms are due to head injury and which to drinking. In many cases of only minor injuries no notation is made as to whether the patient had been drinking or not. Ninety-eight persons were classified as three plus H.B.D. (the scale is from 1 to 4) and 21 persons who had passed out completely were classified as four plus H.B.D. at the time of the accident (see Table 2).

The classification of drinking used at Lincoln Heights is purely a clinical one and is not correlated with the results of intoximeter tests done by the police.

It is believed, however, that the clinical evaluation will correspond closely with that of Wilentz, which is reproduced as Table 3.

Patients receiving emergency care at the receiving hospital are treated within 5 to 20 minutes of the time of the injury in most cases, and because of this there is a very small incidence of shock. It is felt, however, that many of the patients go into shock after leaving the receiving hospital. Cerebral concussion was over three times as common as shock (Table 4).

The various types of injuries were classified as contusions, abrasions, lacerations, fractures, hematomas, avulsions, ecchymoses, whiplash injury and others.

Injuries were also classified according to their anatomical location—head, neck, thorax, abdomen, shoulder, arm, elbow, forearm, hand, knee, thigh,

TABLE 4.—*Incidence of Shock and Concussion in 1,865 Persons Admitted to Hospital Because of Injury in Traffic Accidents*

Shock:	
Mild	19
Moderate	19
Severe	8
	46
Concussion cerebri:	
Mild	74
Moderate	75
Severe	9
	158

TABLE 5.—*Kinds of Injuries in 1,865 Persons Admitted to Hospitals After Traffic Accidents*

Contusions		2,004
Abrasions		1,964
Lacerations		843
Fractures		465
Hematomas		262
Sprains		209
Avulsions		67
Ecchymoses		50
Whiplash injuries		49
Internal injuries		20
Dislocations		10
Amputations		2
Teeth		29
Loose	14	
Fracture	13	
Absent	2	
Miscellaneous*		70
Total injuries		6,024

*Lumbrosacral sprain 1, sprained hip 1, contusions of sacrum 4, coccyx 3, iliac crest 22, buttocks 39.

TABLE 6.—*Injuries to Head, Neck, Thoracic and Abdominal Regions in 1,865 Persons Admitted to Hospital After Traffic Accidents*

	Contusions	Abrasions	Lacerations	Hematomas	Fractures	Avulsions	Ecchymoses	Whiplash Injuries	Sprains	Internal Injuries	
Head	555	468	591	166	121	38	20	....	....	....	
Neck	11	8	11	1	14	1	....	49	57	....	
Thoracic	215	69	7	2	74	1	4	....	....	1	
Abdominal	49	15	2	2	18	....	1	....	....	14	
Totals	830	560	611	171	227	40	25	49	57	15	2608

TABLE 7.—*Injuries to Upper Extremities in 1,865 Persons Admitted to Hospital After Traffic Accidents*

	Contusions	Abrasions	Lacerations	Hematomas	Fractures	Avulsions	Ecchymoses	Sprains	Dislocations	Amputations	
Shoulder	86	54	2	1	21	1	1	19	1	....	
Arm	66	61	12	7	19	2	5	2	....	....	
Elbow	101	159	29	4	10	2	1	5	1	....	
Forearm	79	110	20	10	30	3	....	16	1	....	
Hand	81	155	37	7	13	10	1	7	....	2	
Totals	413	539	100	29	93	18	8	49	3	2	1254

TABLE 8.—*Injuries to Lower Extremities in 1,865 Persons Admitted to Hospital After Traffic Accidents*

	Contusions	Abrasions	Lacerations	Hematomas	Fractures	Avulsions	Ecchymoses	Sprains	Dislocations	
Thigh	122	79	8	9	40	....	3	4	4	
Knee	299	482	62	15	21	2	4	13	....	
Leg	165	174	34	28	59	2	9	2	....	
Ankles	59	69	8	6	24	2	....	24	2	
Feet	42	28	8	4	8	3	1	5	1	
Totals	687	832	120	62	152	9	17	48	7	1934

TABLE 9.—*Injuries to Spinous Region in 1,865 Persons Admitted to Hospital After Traffic Accidents*

	Contusions	Abrasions	Lacerations	Fractures	Whiplash Injuries	Sprains	
Cervical	2	....	....	14	49	7	
Thoracic	18	8	2	6	....	9	
Lumbar	54	25	1	7	....	39	
Totals	74	33	3	27	49	55	241

leg, ankle and feet. Injuries to the spinal region were listed as cervical, thoracic or lumbar (only one classification for each patient).

Multiple injuries of the same type within one body region, such as abrasions or contusions of both arms, or both shoulders or both knees were recorded as a single injury.

The diagnosis of fracture was a clinical one, as x-ray films are not taken at the emergency hospital. The diagnosis of fracture was no doubt proved by x-ray in most of these patients, and fractures not suspected at the time of emergency treatment were no doubt found later by x-ray examination.

A total of 6,024 injuries was noted in the 1,865 patients treated. A compilation of the types of injuries in relation to the various parts of the body affected is listed in Tables 6, 7, 8 and 9.

About 66 per cent of all the injuries were contusions and abrasions. Lacerations, fractures, hematomas, sprains etc. made up the other 34 per cent. About 33 per cent of the total were head injuries. The lower extremities received 53 per cent more injuries than the upper.

A total of 472 fractures were suspected—420 simple, 44 compound and 8 fracture-dislocation. The

TABLE 10.—*Distribution of Fractures in 1,865 Persons Admitted to Hospital After Traffic Accidents*

	Simple	Compound	Fracture Dislocation	
Skull fracture	78	....	....	
Fractured nose	22	3	....	
Fractured jaw	16	2	....	
Fractured clavicle	17	....	....	
Fractured scapula	4	....	....	
Fractured humerus	17	2	....	
Fractured elbow	10	....	....	
Fractured forearm, one bone	25	....	2*	
Fractured forearm, two bones	3	....	....	
Fractured hand	11	2	....	
Fractured sternum	5	....	....	
Fractured ribs	63	....	....	
Fractured pelvis	11	....	....	
Fractured femur	36	3	1	
Fractured patella	10	1	....	
Fractured knee	9	1	....	
Fractured leg	31	28	....	
Fractured ankle	20	1	3	
Fractured foot	5	1	2	
Spinal fractures:				
Cervical	14	....	....	
Thoracic	6	....	....	
Lumbar	7	....	....	
Totals	420	44	8	472

*Radius.

anatomical location of fractures is shown in Table 10. Of the total number of fractures, 121 involved the head.

In addition there were six dislocations and two acromioclavicular separations. There were two amputations of a finger. Broken teeth were associated with contusions and abrasions of the head and neck in 13 instances. In addition there were 14 loose teeth and in two instances teeth were missing.

DISCUSSION

The great preponderance of head and lower extremity injuries illustrates once more the necessity for some device to hold the person firmly in the vehicle. At present, seat belts are no doubt the most practical means. However, in the near future shoulder harness and other more effective means of stabilization will no doubt become available.

It is very seldom that passengers are killed who remain in the vehicle at the time of the accident. The incidence of serious injuries and death can no doubt be greatly reduced by means of better engineering of automobiles. The elimination of projecting handles on the sides and on the dash and better padding of the interior would eliminate many injuries.

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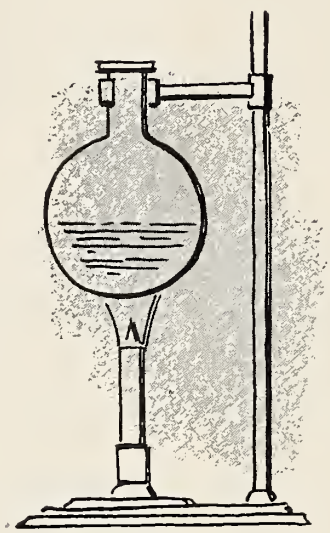

CASE REPORTS

Treatment of Disseminated Coccidioidomycosis With Amphotericin B

Report of a Case

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AMPHOTERICIN B, an antibiotic formed by a species of Streptomyces isolated from a soil sample obtained near the Orinoco River in South America, has been shown to possess *in vivo* activity against experimental coccidioidal infections in mice.[1] This new antibiotic is similar in its action to nystatin, which is also coccidioidocidal *in vitro*, but whereas nystatin is almost totally unabsorbed from the gastrointestinal tract, amphotericin B produces detectable blood levels when administered by mouth.[2] This communication reports a case in which amphotericin B was administered by mouth to a patient with a chronic disfiguring coccidioidal granuloma of the face.

CASE REPORT

A 27-year-old white man came to Kern County, California, in 1947, and worked in the hay fields for two years, during which time he had no unusual respiratory illnesses. In 1949, there appeared on his right cheek a tender swelling, from which Coccidioides immitis was isolated by culture and biopsy. In the ensuing years, the granuloma spread to involve almost the whole right side of the face. The complement fixation for coccidioidal infection rose from 1+ in dilution of 1:32 in 1950 to 1+ in dilution of 1:128 in 1953. Results of precipitin tests also remained positive for four years, which was at that time a new record of persistence of precipitins (which usually disappear within a few months after primary infections, even in the presence of dissemination).

In early 1954 the patient was treated for a while with ethyl vanillate, but could not tolerate the large doses required for a man of his size (80 grams per day—or 40 half-gram capsules every six hours), although there was a temporary remission following the course of treatment.

In January, 1956, the patient had the worst exacerbation of the disease that had occurred up to that time. Although his general condition, nutrition, and strength remained good, the facial lesion became unsightly in the extreme (Figure 1). The whole right cheek, right eyebrow, nose, and lips became involved in the inflammation and granuloma. The nose became widened. Sinuses discharged into the nares and into the mouth, as well as on the external surface. The lips became thick and edematous and the voice hoarse. The appearance was little less than terrifying.

Figure 1.—*Left:* Coccidioidal granuloma of the face of seven years' duration before treatment with amphotericin B. Great edema, inflammation and draining sinuses were present. *Right:* After treatment there was extensive scar tissue but edema and acute inflammation subsided and sinuses healed.

On February 24, 1956, therapy with amphotericin B was begun, 2.4 gm. being given by mouth daily (four capsules of 200 mg. each every eight hours). Two days later the patient reported excitedly that the lesions were drying up and edema subsiding. On examination the report was confirmed. Except for short interruptions when the supply was inadequate, treatment was continued for three months, a

Submitted December 13, 1956.

TABLE 1.—*Urine, Blood, and Liver Function Studies During and After Administration of Amphotericin B*

Date	Urine				Blood							Liver Function Tests		
												Cephalin Flocculation		
	Albumin	Sugar	Leukocytes (Per Field)	Erythrocytes (Per Field)	Hemoglobin (Gm. per 100 cc.)	Leukocytes (Per cu. mm.)	Polymorphonuclear (Per Cent of Leukocytes)	Eosinophils (Per Cent of Leukocytes)	Lymphocytes (Per Cent of Leukocytes)	Monocytes (Per Cent of Leukocytes)	Sedimentation Rate (Mm. in 1 hr.)	(24 hr.)	(48 hr.)	Thymol Turbidity
March 5	0	0	1-3	2-4	14.6	9,700	57	2	39	2	41	0	0	.....
March 22	0	0	occ	0	16.4	12,750	58	1	40	1	27	0	1+	.....
April 30	0	0	occ	0	16.6	9,350	58	....	38	4	25	0	2+	.....
May 10	0	0	occ	0	16.7	11,000	61	....	38	1	7	....	....	.....
June 8	0	0	occ	0	16.8	9,050	54	....	41	4	13	....	....	.....
July 27	....	....	....	....	....	.....	....	....	....	....	....:	2+	3+	9 units

total of 200 gm. being given. Acute inflammation subsided completely. Disfiguration from scar tissue was still considerable, but edema disappeared and all sinuses healed. He said that he felt better than he had for several years, and he was able to return to work for the first time since the illness began in 1949.

There were no symptoms suggesting toxicity, although the cephalin flocculation reaction and thymol turbidity test reaction became mildly abnormal (Table 1). The titer of complement fixation for coccidioidal disease began to regress, falling to 2+ at 1:32. The erythrocyte sedimentation rate (Wintrobe) decreased from 41 mm. in one hour to 7 mm.

DISCUSSION

Lest the purpose of this report be misunderstood, let it be said that it is no new thing to describe a solitary case in which one medication or another is said to "cure" coccidioidal granuloma. For nearly half a century there have been isolated reports of dramatic results with drugs now long discredited. The natural history of coccidioidal disease is so variable that no conclusions should be drawn from a single case. Indeed, Mackler has aptly termed coccidioidomycosis "a disease *without* a natural history."[3] Were amphotericin B in larger supply, no note would be made of its use in just one case. Nevertheless, since the need for an efficacious therapy in disseminated coccidioidomycosis is so pressing, every lead must be followed up until the question of a drug's usefulness can be answered one way or another. Is amphotericin B of value in the treatment of disseminated coccidioidomycosis? This paper is intended to raise the question, not to answer it.

SUMMARY

Improvement in a case of extensive coccidioidal granuloma of the face coincided with treatment with amphotericin B, an antifungal agent derived from Streptomyces.

ACKNOWLEDGMENTS

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Laboratory studies and photography were done through the courtesy of the Madera County Hospital and Dr. Rex Blumhagen, Madera County Health Officer, Madera, California.

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Fatal Disseminated Moniliasis During Prolonged Antibiotic Therapy

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ALTHOUGH RECENTLY there has been an increasing number of reports regarding fungus infections complicating antibiotic therapy, the number of cases of disseminated moniliasis reported with septicemia or meningitis is still small. Such a case occurred at the Los Angeles County General Hospital during the intensive and prolonged treatment necessary in meningitis due to Hemophilus influenzae. Until recently, only three patients have been reported to have had disseminated moniliasis and survived. It is not certain that the therapy used in these cases contributed to the recovery of the patient, but therapeutic agents that are apparently more effective are now becoming available. Awareness and recognition of moniliasis are, therefore, of greater importance now than they have been in the past.

REPORT OF A CASE

A 13-month-old Caucasian girl was admitted to the Los Angeles County General Hospital, Commu-

From the Service of Dr. Albert G. Bower, Chief Physician, Communicable Disease Hospital, Los Angeles County General Hospital, Los Angeles 33.

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nicable Disease Service, on February 23, 1953, with a history of a cold of seven days' duration and irritability, anorexia, drowsiness and fever of two days' duration. The patient became stuporous on February 23. Spinal fluid aspirated at that time was purulent.

The patient appeared well-nourished and semicomatose. The temperature was 100° F., the pulse rate 152 and respirations 34 per minute. The vessels of the tympanic membranes and throat were engorged.

The cerebrospinal fluid contained 4,744 cells per cu. mm., 98 per cent of which were polymorphonuclear cells. The reaction to a Pandy test was 3 plus. The hemoglobin content of the blood was 12.0 gm. per 100 cc. Leukocytes numbered 16,700 per cu. mm., 88 per cent of which were polymorphonuclear cells; Hemophilus influenzae, type B, grew on cultures of the cerebrospinal fluid and blood.

Initial treatment consisted of administration of chloramphenicol and a sulfonamide mixture consisting of equal parts of sulfadiazine and sulfisomidine (Elkosin®), and general supportive measures including intravenous infusion of fluids, aqueous adrenal extract and vitamins. Streptomycin was added on February 24, and when sensitivity studies revealed the organism to be highly sensitive to oxytetracycline (Terramycin®), it was also added on February 27. The patient's condition remained critical until February 28, then improved. Chloramphenicol was discontinued February 28, and streptomycin on March 7. Cultures of cerebrospinal fluid removed after February 25 were negative for pathogenic organisms.

Emesis began on March 1. The temperature continued to range from 99.6° to 101.2° F. daily. Moderate nuchal rigidity was present on March 20. On March 23, the cerebrospinal fluid, which had been clearing, revealed an increase in the percentage of polymorphonuclear cells from 4 to 20. Because the patient vomited all medications given by mouth, oxytetracycline was discontinued on March 24, and chloramphenicol, intramuscularly, was started. On March 28, procaine penicillin was begun. Administration of fluids intravenously was started again on April 1 because of increased vomiting.

Subdural aspiration was done on April 4 and 5 cc. of xanthochromic fluid was withdrawn on the left and 10 cc. on the right. An electroencephalogram on April 7 was within normal limits. On April 8, after the patient had been afebrile for four days, the temperature rose to 101.4° F. and on April 9 to 103° F. The patient was quite lethargic. An x-ray film of the chest showed increased bronchovascular markings throughout. Postfrontal burr holes were made, and there was more than 50 cc. of xanthochromic subdural fluid and a well-formed membrane on both sides. No organisms grew on cultures of the fluid.

The patient seemed much brighter immediately after operation. Chloramphenicol and the sulfonamide mixture were continued postoperatively. On April 10, the patient became lethargic and on April 13 unconscious. Respiratory arrest followed in an hour. She was given artificial respiration and was placed in a respirator. Tracheotomy was done. Subdural fluid was removed through each burr hole the same day, and *Candida albicans* grew on cultures of it. This organism also grew on cultures of spinal fluid obtained April 14. The patient was maintained, as she had been since April 1, on infusions of fluids, blood, aqueous adrenal extract, potassium chloride and vitamins. The temperature gradually declined to 96° F. during the next two days. The patient died suddenly on April 16.

At autopsy the leptomeninges were observed to be thickened, with exudate along the course of the vessels. There was a well-formed membrane lining the subdural space over the brain. Multiple small abscesses of the brain, heart and kidneys contained colonies of ovoid budding cells, some with and others without associated necrosis and inflammation. The heart was moderately dilated. Focal areas of coagulation necrosis involved most of the adrenals, both cortex and medulla. The liver was enlarged, weighing 770 grams, and pronounced vacuolization was noted microscopically. Diffuse hemorrhagic areas were present in all lobes of the lungs, consisting of intra-alveolar hemorrhage without cellular infiltration. The bronchi were normal. There was an acute superficial ulcer of the lesser curvature of the stomach.

Candida albicans was cultured from the meninges, lung, liver and spleen at autopsy. The organisms cultured from the meninges were morphologically typical and the reactions on various carbohydrates were typical. A suspension of these organisms was injected intravenously into rabbits, and they died within five days.

The final diagnoses were: (1) Leptomeningitis, acute, due to Hemophilus influenzae. (2) Septicemia due to *Candida albicans*, with focal abscesses of the brain, heart, and kidneys; leptomeningitis; and infarction of the adrenals.

DISCUSSION

Although the extensive antibiotic therapy cannot be indicted as being the only factor in the dissemination of monilial infection in this patient, it must certainly be most strongly suspected. Debility following prolonged anorexia and vomiting, requiring maintenance on intravenous fluids, was probably also an important factor.

The pathogenesis of monilial infection following antibiotic therapy has been discussed by a number of observers.[6,8,26] Three theories have been proposed to account for the growth of monilia: (1) suppression of the normal flora with substitution; (2) production of a nutritional disturbance, such as a vitamin B deficiency, with resultant openings in the mucous membranes and secondary infection; and (3) direct stimulation.[6,8,26]

Pertinent in consideration of these theories is the experimental demonstration by Seligmann that in-

traperitoneal injection of *Candida albicans* into mice, nonpathogenic alone, was fatal in almost every instance when chlortetracycline was also given. Seligmann interpreted this as indicating a lowering of the animals' resistance to monilial infection by chlortetracycline.[19]

Zimmerman felt that the dissemination of monilia "is usually attributable to a combination of three factors: A general state of increased susceptibility incident to the primary disease; a local lesion, usually in the alimentary or respiratory tract, which the organism uses as a portal of entry; and an ecologic disturbance brought about by the various combinations of antibiotics, hormones, etc."[27]

Carpenter[2] showed a real increase in the number of yeastlike fungi isolated from pediatric patients during the antibiotic era, from 1 in 2,689 cultures in 1940, to 145 in 5,823 cultures in 1951. Both Newcomer[13] and Loh[9] demonstrated the rapid increase in yeasts in the stools of most patients receiving tetracycline antibiotics.

Gastrointestinal symptoms and thrush may follow within one to four days of beginning antibiotic therapy. Positive sputum cultures in monilial bronchomycosis have been found in 7 to 16 days after the beginning of antibiotic therapy, and positive blood cultures have been obtained in disseminated infections in 10 to 23 days.

References to the treatment of disseminated moniliasis are few, and reports of successful treatment are rare. The dearth of discussion probably is owing to the widely held opinion, until recently, at least, that there was no effective treatment. The measures reported as having produced some improvement, however, have been summarized below, with full recognition that improvement in these individual cases does not prove the efficacy of the treatment used. Treatment of local moniliasis and results of experimental work have also been mentioned where there is possible application to the treatment of disseminated moniliasis.

Discontinuance of a suspected drug is a prime part of the treatment of moniliasis. This, with only supportive measures, has been reported to have been followed by improvement in a patient in whom monilial pneumonia developed following chlortetracycline therapy.[25]

The possibility of a vitamin deficiency would indicate the administration of vitamins. The daily administration of vitamin B complex parenterally is stated to have resulted in decreased incidence and more rapid resolution of side effects on mucous membranes.[5]

Iodides have been recommended for many years. It is usually suggested that they be given in increasing doses over prolonged periods. They have been given as potassium iodide orally, as hydriodic acid and as sodium iodide IV. Potassium iodide, 10 to 15 drops of the saturated solution orally three times a day for six months, was reported to have resulted in remarkable improvement in bronchomycosis of four years' duration.[11] Iodides were used in the treatment of two of the surviving patients with disseminated moniliasis mentioned below. In the second patient, however, although the iodide preparations were used intensively throughout the course of the patient's illness, recovery was attributed to antibiotic therapy.[15]

Gentian violet intravenously,[23] autogenous monilial vaccine[22,26] and courses of brilliant green and methylene blue aerosol inhalation[7] have been used in bronchopulmonary moniliasis with improvement reported.

One patient, a 25-year-old male with ependymitis and meningitis due to *Candida albicans*, who was thought to have had syphilis of the central nervous system of 11 months' duration, was given bismuth and potassium iodide and the temperature returned to normal and there was subjective and objective improvement. The patient received 13 more injections and survived nine months after discharge from the hospital.[4]

In a review of the literature reports were found of only three cases in which a patient with a diagnosis of disseminated moniliasis with septicemia or meningitis survived. Blood cultures positive for monilia were obtained from the patient reported by Wessler and Browne, a 43-year-old man, on five occasions during an episode of severe bronchitis. He was given thymol, 0.5 gm., and syrup of hydriodic acid, 4 cc., twice daily. Blood cultures became sterile and the patient was living at the date of report, eight months later.[24]

In 1947, the first case of monilial meningitis with recovery was reported by Zimmerman and co-workers.[28] Monilia was found on both smear and culture of the cerebrospinal fluid. The patient, a 28-year-old man, was given potassium iodide in gradually increasing doses orally for four months, sodium iodide, 1 to 2 gm. intravenously daily, gentian violet by mouth, sulfadiazine, and streptomycin, 0.1 to 0.5 gm. every four hours, and .025 and .050 gm. intraspinally daily for seven days. The patient appeared to respond to streptomycin. Four months later he was apparently cured.[28]

Schaberg and co-workers have described a third case, that of a 24-year-old man with poliomyelitis. *Candida albicans* grew on two blood cultures and on a culture of urine. The patient was treated with sulfathiazole and undecylenic acid without apparent effect. He was then started on cycloheximide (Actidione) at a daily dose of 40 mg. intramuscularly for four days, then 60 mg. per day for over two months, and the temperature returned to normal. A blood culture after one week of cycloheximide therapy was sterile. However, *Candida albicans* still grew on cultures of the urine repeatedly up to the time of the report, a year later. The patient was also treated with a course of stilbamidine intravenously without effect on the pyuria. His general condition at the time of the report was good.[18]

The treatment of moniliasis appears to have been completely changed, however, by the introduction of nystatin (Mycostatin®). Experimentally, Brown and

co-workers showed nystatin to give significant protection against the consistently lethal combination of *Candida albicans* and chlortetracycline intraperitoneally in mice.[1] Sternberg and co-workers, working with mice infected by intravenous injection of *Candida albicans*, noted that 34 of 48 untreated mice died, while only 6 of 79 treated with nystatin died and 6 were "biological cures." Almost all animals in the untreated group had renal infection, compared with approximately 50 per cent in the treated group.[21] Similar results were reported by Drouhet in systemic infections in rabbits.[3] Further studies by Sternberg[21] and Newcomer[13] demonstrated that the daily oral administration of 1 gm. of nystatin reduced or eliminated yeastlike fungi from the stools of 40 of 42 patients. The concurrent administration of tetracycline, oxytetracycline, or chlortetracycline did not alter this effect.

Nystatin was also reported to be very effective in the 35 patients with generalized or localized infections with *Candida albicans* who were reported by Drouhet. There was clearing of digestive and urinary disturbances, and disappearance of oral lesions. "The organisms disappeared from, or were diminished in, the mouth, blood, stools, and urine four or five days after the administration of the antibiotic, the dosage varying between 0.2 and 1 gm. a day."[3]

Nystatin was used locally by Sloane[20] for the treatment of cutaneous and mucous membrane monilial infection, and orally by Robinson[16] and Sarewitz[17] for cutaneous, vaginal, and urinary monilial infections, with rapid improvement. The latter used 0.5 gm. three to four times a day. Relapse on discontinuance of treatment was frequent, requiring retreatment.

Two other substances have also been used in an attempt to prevent monilial complications. Esters of paraben (parahydroxybenzoic acid), which have been employed as preservatives in foods and drugs for years, were given orally with chlortetracycline (142 mg. of methyl paraben and 35.5 mg. of propyl paraben in every 250 mg. capsule of chlortetracycline). Monilia developed in the stools of 63 per cent of patients taking chlortetracycline alone and in only 13 per cent of patients taking chlortetracycline with paraben.[10] Undecylenic acid by mouth has been used in an attempt to prevent the side effects of chlortetracycline, chloramphenicol and oxytetracycline. There were no failures in 20 patients who received undecylenic acid from the time the antibiotics were started; 12 of 45 controls developed symptoms. A dosage of 0.44 gm. with every 250 mg. of other antibiotic was suggested. Undecylenic acid did not eliminate the growth of monilia in the stool or pharynx, but did seem to prevent the fungus from attacking the body tissues. In the light of a report that undecylenic acid by mouth decreased the growth of monilia in thrush vaginitis and brought about definite relief of symptoms, and considering previous work on psoriasis,[14] it was felt that the medication acted by way of the blood stream.[12]

SUMMARY

A fatal case of disseminated moniliasis occurring during the prolonged treatment of Hemophilus influenzae meningitis with subdural effusion is presented. The case was similar to most other reported cases of disseminated moniliasis in that the general condition of the patient was extremely poor at the time of dissemination. Review of the literature indicates that, although treatment of disseminated moniliasis has not been very successful in the past, several types of therapy have been reported to have resulted in some improvement in individual cases. These include treatment with iodides, bismuth, thymol, streptomycin and cycloheximide. The experimental and clinical effectiveness of nystatin, however, would indicate that it will probably replace all other therapy. Three cases of survival following disseminated moniliasis prior to nystatin therapy are cited.

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Agenesis of the Lung and Contralateral Diaphragmatic Hernia in a Newborn Infant

JOHN CHAMBERS, M.D., and
CHESTER TANCREDI, M.D., San Diego

CONGENITAL ABSENCE OF A LUNG is a relatively rare anomaly. It is compatible with normal development and longevity. Congenital defects associated with it frequently cause death in the neonatal period. In the case presented here, congenital right pulmonary agenesis was associated with left Morgagni foramen diaphragmatic hernia in a newborn child. The baby lived after surgical repair of the hernia. No similar case has been described in the literature.

REPORT OF A CASE

The patient, a 6 pound, 3 ounce girl, was born by outlet forceps delivery with episiotomy. It was noted that the feet remained cyanotic during the first day of life. An incubator was used and oxygen was given. The infant was discharged the next day, with the mother, the color being reported as normal.

Two weeks later she was readmitted to the hospital with a history of coryza for a week and increasingly difficult breathing and cyanosis for the preceding few days. Feeding had also been poor.

On examination, slight cyanosis and noisy respiration was noted. There were diminished breath sounds over the right side of the chest. The trachea was midline. There was questionable retraction of the chest on the right side, and the heart sounds were heard on the right.

Postero-anterior and right lateral films of the chest (Figure 1) showed opacity on the right, with the heart retracted to that side. At the left cardiophrenic angle there was a cystic, air-containing area which apparently was bowel above the diaphragm.

With the patient under oxygen-ether anesthesia, bronchoscopic examination was carried out with the 3-16 Jesberg bronchoscope. The main carina was observed to be rotated 30 degrees clockwise. The right main stem bronchus ended in a blind stump about 0.5 cm. in length. After the bronchoscope was removed an endotracheal catheter was inserted and the infant's condition became precarious, oxygenation being carried out by quite forcefully squeezing the anesthesia bag.*

A midline upper abdominal incision was made and a defect two and a half inches long in the anterior part of the left diaphragm, in the usual area of the foramen of Morgagni, was observed. A peritoneal sac was present. The defect was closed with interrupted silk imbricating the sac. The pleural cavity was not opened. As the defect was closed the pronounced paradoxical motion of the diaphragmatic defect was corrected and the infant's condition immediately improved. The abdominal wall was closed in layers with silk.

The postoperative course was uneventful. Oxygen was given for four days, aerosol being used for humidification. An x-ray film of the chest showed no hernia. The patient was discharged four days after the operation. She developed normally but had frequent episodes of respiratory tract infection which necessitated hospitalization five times between the sixth and the eleventh month of life. On each occasion the disease was accompanied by difficult breathing and wheezing, and in spite of administration of antibiotics and inhalation of steam at home, invariably progressed to bronchiolitis with cyanosis. Oxygen-

Submitted July 23, 1956.

*Dr. Paul Pentecost administered the anesthesia.

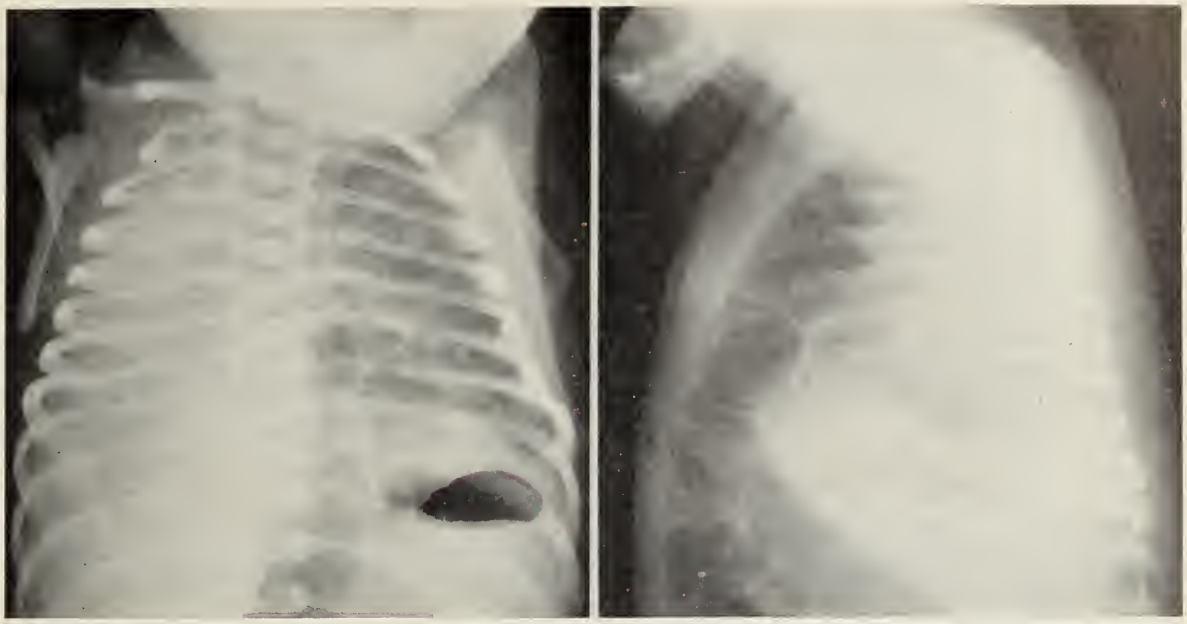

Figure 1.—X-ray films showing herniation of the bowel through the anterior portion of the diaphragm and the absence of the right lung.

aerosol therapy was given each time and the patient recovered in three to four days. As she grew older the attacks of respiratory tract disease became less severe. When free of infection she was alert and active. The growth pattern was within normal limits. Figure 2 is an x-ray film of the chest taken two years after the operation.

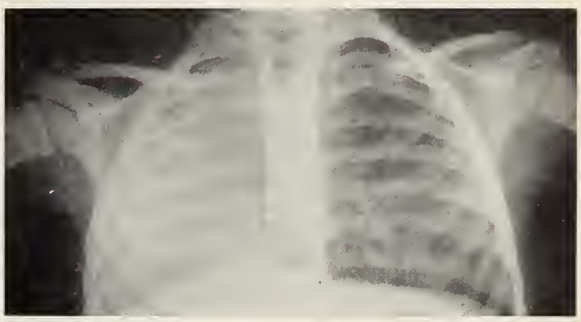

Figure 2.—Diaphragm normal two years after repair of the hernia.

DISCUSSION

Congenital absence of the lung has been reported with increasing frequency in recent years. Valle in January, 1955,[5] reviewed the literature and assembled data on 120 cases. about half of which were reported the 12 previous years. The oldest patient of record died at the age of 72 years. Although the absence of a lung might conceivably decrease a patient's ability to resist respiratory infections, survival in this condition depends mainly on the presence of other congenital anomalies. Despite the frequent association of other anomalies with pulmonary agenesis, there was only one other diaphragmatic anomaly mentioned in the literature. This was in the case, reported by Hanson[2] in 1901, of an infant surviving only about 15 minutes with agenesis of the left lung, which at autopsy "looked like a bunch of millet seed not larger than a buck shot," and a rudimentary left diaphragm consisting of a "small band of muscular fibers about one-eighth inch in width along the border of the ribs." Posteriorly there was no diaphragm at all in this case. the left pleural cavity being filled with small and large bowel. The malrotated cecum and appendix lay at the apex against the clavicle.

Campanole and Rowland[1] reported five cases of hypoplasia of the lung associated with ipsilateral Bochdalek foramen hernia. At autopsy the weight of the lungs was 5.5 grams in two cases. and in the three others 2.5, 5 and 6 grams. In a case of ipsilateral Bochdalek foramen hernia and hypoplasia reported by Tolin,[4] normal aeration of the hypoplastic lung eventually occurred.

These cases apparently represent a different condition than that reported by Hanson, in that the major bronchi were present and the lung tissue was capable of aeration. In Hanson's case, unlike the case herein reported, the hernia was on the same side as the agenesis. Also in the present case the diaphragmatic defect was not as large and a peritoneal sac was present, hence respiratory embarrassment was less severe. However, the paradoxical motion of the herniated abdominal contents through the anterior defect did cause considerable difficulty during anesthesia. Certainly the combination of anomalies in the present case would not have been compatible with prolonged life had not correction of the hernia been carried out.

Pathologically, Schneider[3] has classified agenesis into: (1) True aplasia, (2) hypoplasia with rudi-

mentary bronchus and no lung tissue, and (3) hypoplasia with bronchus and lung tissue present. These types cannot be accurately differentiated clinically. The diagnosis of agenesis rests during life on examination by bronchoscopy, by bronchograms, by angiocardiograms, by thoracotomy or by a combination of these methods.

Usually the chest is asymmetrically flattened, with respiratory lag on the involved side. The mediastinal structures are pulled toward the involved side and signs of diminished aeration on the affected side are usually present.

By x-ray a radiopaque hemithorax is noted, except for the area of herniation of the lung across the midline, which is usually present. On the involved side the diaphragm is elevated, the intercostal spaces narrowed and the mediastinal structures are pulled toward that side.

The prognosis in pulmonary agenesis depends mainly on associated anomalies. The repeated episodes of respiratory tract disease in the early life in the present case, before growth of the left lung into the right chest had taken place, illustrate the added danger of infections in such patients, owing to reduced ventilatory reserve. Since usually in cases of diaphragmatic hernias of the foramen of Morgagni there is a peritoneal sac, the transperitoneal approach is far superior to the thoracic approach for repair of the defect. This was particularly true in the present case, for it obviated pneumothorax on the side of the only lung.

SUMMARY

A patient with congenital absence of the lung and contralateral diaphragmatic hernia—a combination of anomalies not previously reported—was treated successfully by repair of the hernia.

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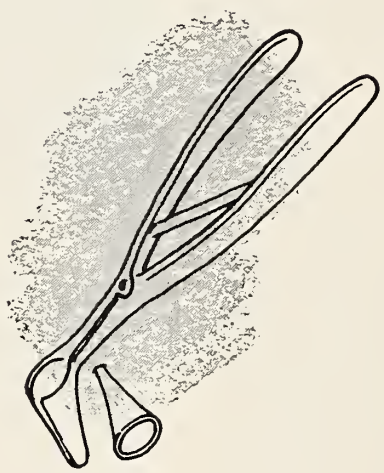

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EDITORIAL

Malpractice Insurance Rates

PHYSICIANS throughout California and the nation have become painfully aware of the rapid increase in premium rates for their malpractice insurance in recent years. While there seems no additional increase in rates due in some parts of the state at this time, the trend has been upward and the ratio of coverage downward to the point where many physicians are wondering if an end is in sight.

The increased cost to the physician is, of course, eventually borne by the patient just as he bears the cost of rent, salaries and the other items making up the physician's overhead expense.

In the light of this experience, a news report carried in the San Francisco *Examiner* on January 13 takes on added significance. Headed "Auto Insurance Rates Going Up Again Tomorrow," the item reports that automobile insurance coverage will command higher rates as of right now—in some instances as much as 25 per cent more.

The story then relates the background for the rise in rates, pointing to higher costs of hospitalization and nursing, higher levels for settlements effected out of court and sky-high judgments handed down by juries in personal injury cases.

A student of malpractice insurance in recent years could easily substitute the words "medical malpractice" for the word "automobile" in this news story and gain an accurate appraisal of the insurance trend in this field.

Both automobile insurance and medical malpractice insurance cover personal injuries. Both encounter hospitalization and allied expenses. Both are vulnerable to high judgments which require the prudent policyholder to invest in large amounts of coverage. The analogy between the two is obvious.

The automobile insurance story in the *Examiner* states that "insurance men contend . . . the steady climb in personal injury awards . . . [is] based more on emotions than on facts." This statement could be applied with equal validity to malpractice awards, as any losing physician or his legal representatives could readily testify. Juries are subject to the pulling out of all the emotional stops.

Pointing out that automobile injury claims cost some $200 million yearly, the report notes that "the cost is passed along to insurance buyers and goes steadily upward." While a physician cannot pass his malpractice insurance cost along to his patients directly, he certainly must do so indirectly as a part of his fees. Certain it is that he cannot absorb such mounting costs without some form of reimbursement.

Settlements of automobile injury claims in 1940 averaged $400, the newspaper story says; in 1955 the average was $8,500. On top of that, "jury verdicts that run into hundreds of thousands of dollars frighten insurance men, who fear that each such verdict can bring on a rash of similar ones." The story points out that such a rash has not yet developed but is a continuing potential threat.

Medicine has not been so fortunate. The rash has developed, here and in other areas. The evil day has arrived for medical malpractice, and the insurance men doubtless sense the impending extension of this public philosophy into the much broader field of automobile coverage.

Interestingly enough, the blame for automobile accidents can generally be established with a high degree of accuracy, while the same cannot be said in medical malpractice cases. Here the physician is required to maintain certain minimum standards of skill and proficiency; on top of that he is often held accountable by judges and juries for unsatisfactory results of treatment which may have no bearing whatsoever on his proficiency. Even where nature, not man, is accountable for a bad result, physicians have frequently been held to account by the courts.

As a part of the automobile insurance story, the *Examiner* refers to the National Association of Claimants' Compensation Attorneys, a nationwide organization of lawyers who specialize in claims for damages. This group has become well organized, not only as a so-called trade group but also as instructors in the art and technique of courtroom tactics designed to influence judgments for plaintiffs. The newspaper refers to these as "intense courtroom techniques."

While many of the facts related in this report are not new, it is interesting that to date there seems to have been little if any resource to inhibit them. Several years ago a group of insurance companies initiated a public education campaign to let prospective jurors know that high judgments handed down by them must eventually come out of their own pockets in the form of higher insurance costs. Immediately the plaintiffs' attorneys raised a hue and cry, claiming that such advertising was an improper representation to citizens then serving on juries. While the insurance carriers successfully weathered that storm, the public education program was discontinued and it is doubtful that its lessons were well learned or long remembered.

An even stronger claim could be made with regard to unwarranted medical malpractice cases. Here the cost to the public may be expected to be of two kinds —one measurable in money, the other in the quality of medical care. Costs will increase because of the added procedures, such as x-rays and laboratory tests, which the medical practitioner will require as his sole means of making his records courtroom-proof. And the standards of medical practice may be affected in this way: Some physicians might be expected to eschew certain procedures or techniques which are beneficial to 95 per cent or more of the people but which, for an unpredictable minority, present to the physician the potentiality of a lawsuit. Medical advances, which have been so rapid in recent years, may have to undergo a period of stagnation while courtroom hazards intimidate the physician who is, by training and experience, qualified to use them for the benefit of his patients. During such a period, the practice of medicine may well be governed by those "laymen" who sit behind the judicial bench or the jury box railing.

Under today's conditions, physicians face increasing insurance rates and increasingly strict legal interpretations of their activities. They retain the right to be represented by counsel and it is natural to assume that legal minds will explore the situation even more thoroughly than has been done in the past.

For the sake of all concerned, so long as illness and the treatment of illness is with us, it is hoped that a more satisfactory solution may be reached, one which will establish both physicians and patients in their rightful spheres and eliminate what is probably an expression of the economic transition of the times.

Contribution to World Peace

To make the universal language of medicine a more cogent factor in the cause of international peace and human progress, physicians of the free world are united in the World Medical Association, whose membership now embraces 53 national medical associations. With medicine as a solvent of the barriers of race, color, creed and nationality and with the World Medical Association at hand to make use of the better understanding that comes with the better interchange of ideas, every American physician now has the opportunity to help make our profession a stronger influence for world peace. This he may do by joining our own United States Committee of the World Medical Association.

One of the constitutional purposes of the W.M.A. is to promote world peace. Toward this end at its tenth general assembly in Havana last October, the organization adopted a six-point program: The development of mutual exchange visits of foreign physicians; exchanges of distinguished medical teachers; establishment by each W.M.A. member national association of an "international visitors' bureau"; stimulation of visits by representatives of member associations to the annual meetings of other member associations; holiday exchange programs between physicians and their families; and exchange of textbooks and medical and scientific publications.

You may play your part in this laudable program by joining the U. S. Committee of the W.M.A. Active membership dues for 1957 are $10. To join the U. S. Committee—and to learn how you can contribute to this great cause—communicate with Louis H. Bauer, M.D., World Medical Association, 10 Columbus Circle, New York 19, N. Y.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Executive Committee Minutes

Tentative Draft: Minutes of the 261st Meeting of the Executive Committee, San Francisco, December 6, 1956.

The meeting was called to order by Chairman Heron in the Walnut Room of the Sir Francis Drake Hotel, San Francisco, on Thursday, December 6, 1956, at 2:00 p.m.

Roll Call:

Present were President-Elect MacDonald, Council Chairman Lum, Speaker Doyle and Auditing Committee Chairman Heron, and ex-officio, Editor Wilbur and Secretary Daniels.

Absent for cause, President Charnock.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas and Gillette of C.M.A. staff, legal counsel Hassard, Messrs. Ben H. Read and Eugene Salisbury of the Public Health League of California.

Present during a portion of the meeting were Mr. J. E. Smits, legislative chairman, Messrs. Avery Millard, James E. Ludlum, Robert J. Thomas, Joseph L. Zem, Max E. Gerfen, George U. Wood, Msgr. T. J. O'Dwyer and Doctor W. W. Stadel, representing the California Hospital Association; Misses Ruth Jorgenson and Christine McKenzie of the California League for Nursing; and Mr. E. E. Cosand, representing the Junior College Association.

1. *Membership:*

(a) On motion duly made and seconded in each instance, three applicants were voted Retired Membership. These were: Thomas Floyd Bell of Alameda-Contra Costa; Madeline M. Manuel of Los Angeles; and Alson R. Kilgore of San Francisco.

(b) On motion duly made and seconded, seven applicants were voted Associate Membership. These were: Robert G. Richards, Dirk M. teGroen, Los Angeles; E. David Akers, Sacramento; Mary F. Ni, San Joaquin County; James M. Bodie, San Mateo County; Lloyd S. Bambauer, Shin Hsin Gin, Tulare County.

(c) On motion duly made and seconded, reductions in dues were voted one applicant.

2. *Financial:*

Discussion was held on the mileage allowance for those officers, Councilors, committee members and others who use their own cars on Association business. On motion duly made and seconded, it was voted to recommend to the Council that the allowance be set at 10c a mile.

3. *Nurse Education:*

Misses Jorgenson and McKenzie, representing the California League for Nursing, and Mr. Cosand, representing the Junior College Association, discussed a proposal that nurses be trained in the junior colleges for a period of less than 36 months, as now required by law. They estimated a 24-month course and pointed out that the Pasadena Junior College has already graduated 18 nurses from such a course and that junior colleges in Bakersfield and Contra Costa County may institute similar courses. Nationally, such courses have been given since 1950, there are some 200 graduates of such courses, and 300 students are now enrolled.

This proposal would take the form of legislation to amend the Nurse Practice Act, to permit the

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Board of Nurse Examiners to have authority to lower the present 36-month training minimum for registered nurses.

On motion duly made and seconded, it was voted to look upon this proposal as an interesting experiment but to withhold support from the proposed legislation at this time in view of the limited experience demonstrated in the proposed training program.

4. *Foreign Medical School Graduates:*

Mr. J. E. Smits, legislative chairman of the California Hospital Association, and others discussed proposed legislation which would permit foreign physicians to undertake internships in California without the initial written examination now required.

On motion duly made and seconded, it was voted to report this proposal to the Council and to ask the Board of Medical Examiners to participate in the deliberations.

5. *Health Insurance:*

Discussion was held on a request from a health insurance consultant to appear before the Council or Executive Committee in support of a request that indemnities in commercial insurance contracts be considered as full payment for services rendered. On motion duly made and seconded, it was voted to invite this consultant, together with labor and management trustees of health and welfare trust funds, to appear before a meeting of the Executive Committee and the members of the Executive Committee of the Commission on Medical Services.

6. *Polio Vaccine:*

Doctor Lum read a letter from Doctor Hartzell Ray in which he suggested the Association support a statewide drive to insure the vaccination with Salk vaccine of all Californians under age 40. Since the Council had previously approved such action, the executive secretary was instructed to advise Doctor Ray accordingly.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:40 p.m.

IVAN C. HERON, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

CALIFORNIA MEDICAL ASSOCIATION

Eighty-sixth Annual Session

April 28 - May 1, 1957

AMBASSADOR HOTEL • LOS ANGELES

In Memoriam

Berauer, Joseph M. Died December 21, 1956, aged 89. Graduate of the Medical College of Ohio, Cincinnati, 1893. Licensed in California in 1923. Doctor Berauer was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Brown, Elvin O. Died in Sacramento, December 30, 1956, aged 73. Graduate of the Chicago College of Medicine and Surgery, Illinois, 1909. Licensed in California in 1922. Doctor Brown was a member of the Sacramento Society for Medical Improvement.

✣

Dahleen, Henry E. Died in San Jose, December 17, 1956, aged 74, of heart disease. Graduate of the University of Minnesota Medical School, Minneapolis, 1908. Licensed in California in 1920. Doctor Dahleen was a member of the Santa Clara County Medical Society.

✣

Dooley, John B. Died March 26, 1956, aged 83. Graduate of the University of Arkansas School of Medicine, Little Rock, 1908. Licensed in California in 1925. Doctor Dooley was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Fraser, Robert C. Died in Hollywood, December 13, 1956, aged 72. Graduate of Wayne University College of Medicine, Detroit, Michigan, 1905. Licensed in California in 1929. Doctor Fraser was a member of the Los Angeles County Medical Association.

✣

Gerrard, Clarence Charles. Died in Bakersfield, December 11, 1956, aged 68, of heart disease. Graduate of the University of Vermont College of Medicine, Burlington, 1913. Licensed in California in 1930. Doctor Gerrard was a member of the Kern County Medical Society.

✣

Glenn, Samuel G. Died in Oxnard, December 4, 1956, aged 37. Graduate of the University of Illinois College of Medicine, Chicago, 1948. Licensed in California in 1949. Doctor Glenn was a member of the Los Angeles County Medical Association.

✣

Golden, John Henry. Died in Boise, Idaho, December 18, 1956, aged 50, of heart disease. Graduate of Georgetown University School of Medicine, Washington, D. C., 1930. Licensed in California in 1930. Doctor Golden was a member of the San Francisco Medical Society.

✣

Hamilton, Luke N. Died in Oakland, December 13, 1956, aged 53, of congestive heart failure. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1930. Licensed in California in 1930. Doctor Hamilton was a member of the Alameda-Contra Costa Medical Association.

Josephi, Marion Gertrude. Died in Walnut Creek, December 5, 1956, aged 55, of generalized carcinoma metastatic from carcinoma of the breast. Graduate of Cornell University Medical College, New York, N. Y., 1926. Licensed in California in 1949. Doctor Josephi was a member of the Alameda-Contra Costa Medical Association.

✣

Loveall, George R. Died in San Diego, December 12, 1956, aged 41, of leukemia. Graduate of Northwestern University Medical School, Chicago, Illinois, 1943. Licensed in California in 1944. Doctor Loveall was a member of the San Diego County Medical Society.

✣

Magg, Davin. Died in Santa Ana, November 30, 1956, aged 47, of heart disease. Graduate of Medizinische Fakultät der Universität, Wien, Austria, 1936. Licensed in California in 1939. Doctor Magg was a member of the Orange County Medical Association.

✣

Myers, Lloyd. Died in San Diego, December 12, 1956, aged 65. Graduate of the University of Nebraska College of Medicine, Omaha, 1918. Licensed in California in 1931. Doctor Myers was a member of the San Diego County Medical Society.

✣

Mullen, Eugene W. Died in San Jose, December 31, 1956, aged 79. Graduate of the University of Michigan Medical School, Ann Arbor. Licensed in California in 1911. Doctor Mullen was a retired member of the Santa Clara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Pallesen, Viggo Waldemar. Died December 31, 1956, aged 68, of a stroke. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1929. Licensed in California in 1931. Doctor Pallesen was a member of the San Joaquin County Medical Society.

✣

Petersen, Ralph C. Died in Los Angeles, December 25, 1956, aged 49. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1937. Licensed in California in 1945. Doctor Petersen was a member of the Los Angeles County Medical Association.

✣

Taylor, Mary Carolyn. Died February 20, 1956, aged 90. Graduate of Cooper Medical College, San Francisco, 1905. Licensed in California in 1905. Doctor Taylor was a retired member of the San Joaquin County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Tice, Eldon W. Died in Los Angeles, January 3, 1957, aged 73. Graduate of the College of Physicians and Surgeons, Los Angeles, 1918. Licensed in California in 1918. Doctor Tice was a member of the Los Angeles County Medical Association.

POSTGRADUATE INSTITUTE

WEST COAST COUNTIES

Presented by *Postgraduate Activities Committee* of the California Medical Association, in cooperation with University of Southern California School of Medicine, Los Angeles, Phil R. Manning, M.D., Director of Postgraduate Division.

Golden Bough Theater and La Playa Hotel

CARMEL . . . MARCH 7 and 8, 1957

PROGRAM

Thursday Morning, March 7

INTERNAL MEDICINE

9:00-10:45—Lectures, Golden Bough Theater—
The Differential Diagnosis of Jaundice. Thomas H. Brem, M.D.
Electrolyte Problems. Telfer B. Reynolds, M.D.
Treatment of Diabetes. Helen E. Martin, M.D.
Nephrosis and Nephritis. Ralph E. Homann, Jr., M.D.

11:00-12:00—Three Concurrent Panel Discussions—La Playa Hotel (Three faculty members each; you may go to one of your choice.
Acute Pancreatitis.
Recent Advances in Treatment in Internal Medicine.
Cardiac Patient in Pregnancy.

12:15-1:45—Lunch.
The Role of the California Medical Association in Postgraduate Medical Education. Edward C. Rosenow, Jr., M.D.

Thursday Afternoon, March 7

OBSTETRICS AND GYNECOLOGY

2:00-3:40—Lectures, Golden Bough Theater—
Office Gynecology. George A. Macer, M.D.
Pelvic Pain. Charles F. Langmade, M.D.
Dystocia. Bernard J. Hanley, M.D.
Obstetrical Anesthesia. Judson S. Denson, M.D.

4:00-5:00—Three Concurrent Panel Discussions, La Playa Hotel. (Three faculty members each; you may go to one of your choice.)
Low Back Pain.
Acute Abdomen in Pregnancy.
The Diabetic in Pregnancy.

8:00—Joint Dinner Meeting with Monterey County Medical Society at La Playa Hotel. Wives are invited to attend.
Cardiology of Yesterday, Today and Tomorrow. George C. Griffith, M.D.

Friday Morning, March 8

SURGERY

9:00-10:45—Lectures, Golden Bough Theater—
Vascular Surgery. Herbert J. Movius, II, M.D.
Diagnosis of Acute Abdomen. E. M. Greaney, M.D.
Treatment of Burns. Irving A. Meeker, Jr., M.D.
Management of Upper G.I. Bleeding. E. M. Greaney, M.D.

11:00-12:00—Three Concurrent Panel Discussions, La Playa Hotel. (Three faculty members each; you may go to one of your choice.)
Diagnosis of the Acute Abdomen in Childhood.
Electrolyte Problems in Surgical Patients.
Immediate Management of Traumatic Conditions.

12:15-1:45—Lunch.
Goals in Postgraduate Medical Education. Phil R. Manning, M.D.

Friday Afternoon, March 8

2:00-3:45—Lectures, Golden Bough Theater—
Orthopedic Problems in General Practice. Lorin L. Stephens, M.D.
Newborn Emergencies. Merl J. Carson, M.D.
Anesthesia in Pediatrics. Judson S. Denson, M.D.

4:00-5:00—Three Concurrent Panel Discussions, La Playa Hotel—
Management of Bacterial Infections.
Metabolic Bone Diseases.
Treatment of Anemias.

Each panel discussion will be led by three faculty members and one physician from the community. You may go to one of your choice.

HOSTS: Monterey County Medical Society . . . **REGIONAL CHAIRMAN:** Edwin W. Tucker, M.D., 1073 Coss Street, Monterey . . . **FEE:** $15.00. For additional information, contact Postgraduate Activities office, California Medical Association, 417 South Hill Street, Los Angeles 13. Special room rate at La Playa Hotel: $8.00, single; $10.00, double. Make hotel reservations early directly with hotel.

All California Medical Association Members are cordially invited to attend. Special activities are planned for wives during entire two days by Woman's Auxiliary, Monterey County Medical Society.

APPLICATION FOR HOUSING ACCOMMODATIONS

Eighty-sixth Annual Session
CALIFORNIA MEDICAL ASSOCIATION
Los Angeles, California
APRIL 28—MAY 1, 1957

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association,** April 28-May 1, 1957, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1957

HOTEL ROOM RATES*

	Single	Double	Twin Beds	Suites
AMBASSADOR HOTEL				
3400 Wilshire Baulevard				
Main Building	9.00-17.00		12.00-20.00	28.00-36.00
Garden Studias	15.00-21.00		22.00-26.00	38.00-48.00
CHAPMAN PARK HOTEL				
3405 Wilshire Baulevard			12.00	20.00-25.00
THE GAYLORD HOTEL				
3355 Wilshire Baulevard	7.00-9.00	10.50	11.50-12.50	18.00
HOTEL CHANCELLOR				
3191 West Seventh Street	6.00-8.00	9.00-10.00	10.00-12.00	17.00-22.00
SHERATON-TOWN HOUSE				
2961 Wilshire Baulevard	11.00-16.00		16.00-23.00	31.00

*The above quoted rates are existing rates but are subject to any change which may be made in the future.

CALIFORNIA MEDICAL ASSOCIATION
450 Sutter Street—Raam 2000
San Francisca 8, Califarnio

Please reserve the fallawing accammadatians far the 86th Annual Sessian af the Califarnio Medical Assaciatian, in Las Angeles April 28 - May 1, 1957.

Single Roam $..... Double Bedded Roam $..... Twin Bedded Roam $.....

Small Suite $..... Lorge Suite $..... Other Type af Raom $.....

First Chaice Hatel..... Secand Chaice Hatel.....

ARRIVING AT HOTEL (date).....Haur:.....A.M.....P.M. } Hotel reservations will be held until

Leaving (date) .....Haur:.....A.M.....P.M. } 6:00 P.M., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names af bath persans far each dauble raam or twin bedded raam requested. Names and addresses af all persans far wham yau are requesting reservatians and wha will accupy the rooms asked far:

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Individual Requesting Reservatians—Pleose print ar type Delegate?..... Alternate?.....

Name..... County.....

Address..... City and State.....

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

A Public Relations Letter To All California Physicians

DEAR DOCTOR:

You probably will be reading this at your office. No doubt there are many things to be done—charts to write, files to be completed—and maybe you had hoped for a few minutes to tidy up your desk, or even to read other articles in this journal. But please . . . for right now . . . won't you just lean back and treat yourself to a few minutes of relaxation as you read this page? (You may even rest your feet on the desk—while I hope that the phone doesn't ring until you finish!)

Of course you have already guessed that I want to tell you a little about the public relations activities of your state auxiliary. And before we go any further, I do trust that your wife is a member! If she isn't, won't you please encourage her to join her county auxiliary? She will find it very rewarding, for the aims of the auxiliary are very much the same as those of your C.M.A. She will meet women whom she will grow to know and to love. Many of these women will become cherished friends—certainly one of the finest compensations of auxiliary membership. Your wife will learn of issues affecting medicine, and in turn perhaps she can inform you, for the auxiliary works very closely with the A.M.A. and the C.M.A. as well as with the component county medical associations.

Public relations is really a very broad field. It isn't something which can be accomplished in a single program or project, but it's "everything we do —or fail to do—our every act, and word and attitude—which creates an impression, good or bad, on the public." It's the way we live our own personal lives and the manner in which we conduct our auxiliary activities. Good public relations is not something which can be accomplished entirely by just one person or even by one committee—it takes all of us working together to be most effective. And that's just another reason why we need every doctor's wife as an auxiliary member.

To acquaint the public with the aims of the Medical Association and its auxiliaries some specific projects are planned each year in all our counties. It may be an auxiliary booth at the county or state fair which helps persons without medical background to better understand the medical profession; or it may be active participation in civil defense or community health. All such activities are, of course, with the approval of the Medical Association. Many county auxiliaries hold a combined meeting with the wives of lawyers and dentists. This may be announced as "Auxiliary Guest Day" or "Community Leadership Luncheon."

Individually an auxiliary member promotes good public relations when she thinks to send gift subscriptions for *Today's Health* to her nonmedical friends; when she contributes service hours to civil defense or to some of the voluntary health programs within her community.

The American Medical Education Foundation, the Physicians' Benevolence Fund and Nurse Recruitment are all major auxiliary projects. The element of self help has a definite appeal within our own group and with the public as well. By planning fund-raising activities for these worthwhile projects the auxiliary has been given some excellent press coverage throughout the entire state.

The Christmas season is a perfect time of year for the auxiliary to help the less fortunate people in its community. Literally hundreds of gifts are taken to hospitals, rest homes and orphanages. Phonograph records, hair dryers, cosmetics, subscriptions to newspapers, magazines, toys and dolls are just some of the gifts which cheered many a heart last Christmas day.

You may be interested to know that the C.M.A.'s new public relations *Newsletter* is being sent to every member in our state auxiliary—almost 7000 women. We think it is very informative and we are pleased to have been placed on your mailing list.

In speaking before a group of physicians' wives, Mr. James E. Bryan, author of *Public Relations in Medical Practice*, said: "The wife of a physician can play her most important role helping to build a bridge of understanding between the doctor and the nonmedical community. Although she is a doctor's wife, she is also a part of the nonmedical world about him." Mr. Bryan suggested that the wife of a doctor can do much for medical public relations if she takes a leading part in the community. The very fact that a devoted worker is a doctor's wife will reflect credit on the entire medical profession.

Well, these are some of the public relations activities I wanted to tell you about—nothing too spectacular really. However, we always keep in mind that we are an auxiliary to the California Medical Association and that our activities must always reflect credit upon the medical profession. This motto we keep before us, "We teach a little by what we say. We teach more by what we do. But, we teach most by what we are."

Sincerely,

MRS. FLOYD K. ANDERSON,
Public Relations Chairman

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

The Sixth Annual **Clifford D. Sweet Seminar** will be held on June 7 and 8, 1957, at the Children's Hospital of the East Bay in Oakland.

The guest speaker is Sydney S. Gellis, M.D., professor of pediatrics, Boston University School of Medicine, Boston.

LOS ANGELES

Dr. George V. Webster of Pasadena was elected president-elect of the American Society for Surgery of the Hand at the annual meeting of the society held in Chicago late last month. Dr. J. Edward Flynn of Boston was installed as president, succeeding **Dr. Lot D. Howard, Jr.**, of San Francisco, who was elected to the council of the society.

* * *

The 24th annual meeting of the **Western Branch, American Public Health Association,** will be held May 29 to June 1 at the Lafayette Hotel in Long Beach. Special sessions will be held covering epidemiology, public health education, sanitation, laboratory, nutrition and industrial hygiene.

SAN FRANCISCO

A one-day **Medical Symposium on Cerebral Palsy** will be conducted in San Francisco March 2 by the Medical Advisory Board of the United Cerebral Palsy Association of San Francisco in cooperation with the University of California School of Medicine and Medical Extension and Stanford University School of Medicine.

The program will be held at the University of California Medical Center, 2nd and Parnassus Avenues.

Guest speaker will be Samuel P. Hicks, M.D., assistant professor of pathology Harvard Medical School, and pathologist for the New England Deaconess Hospital, Boston. Dr. Hicks' topic will be "Mechanisms of Malformation."

Further information about the program may be obtained by writing Seymour M. Farber, M.D., Head, Medical Extension, University of California Medical Center, San Francisco 22.

* * *

Dr. L. Henry Garland, San Francisco, was elected president of the California Academy of Medicine at the recent annual meeting of the organization. He succeeds Dr. Clayton D. Mote.

Dr. Matthew E. Hazeltine was named president-elect, and Dr. Hilliard J. Katz was reelected secretary-treasurer.

SAN JOAQUIN

Dr. James J. Heffernan was elected president of the San Joaquin County Medical Society at the annual meeting in January. Dr. Heffernan succeeds Dr. Louis Armanino. Dr. Gilbert den Dulk, Ripon, was named president-elect and Dr. F. A. McGuire was reelected secretary-treasurer.

Named as delegates to the California Medical Association were Drs. Armanino, John F. Mayo of Lodi, James Benn of Ripon, and Paul R. Noetling of Angels Camp.

SAN MATEO

Dr. Henry A. Brown, Burlingame, was installed as president of the San Mateo County Medical Society at the annual meeting held in December. He succeeded Dr. Norman C. Fox of San Bruno. Dr. Ferrall H. Moore, Redwood City, was elected president-elect. Elected as the society's representative in the House of Delegates of the California Medical Association were Drs. Brown and Moore and Drs. Bradley C. Brownson, Harry F. Smith, Hartzell H. Ray, Alan M. Hedden, Logan Gray, James F. Sawtelle and Daniel Boudett.

SHASTA

Dr. John E. Wolf, assistant medical director at Shasta County Hospital, has been appointed temporary health officer for the county to take the place of Dr. Rachel Sandrock, who resigned last summer and then continued to serve while a replacement for her was being sought. Dr. Wolf will serve in the position on a part-time basis while continuing at his post at the hospital.

GENERAL

Dr. Wilton L. Halverson, former California State Director of Public Health (1943-1954) and professor emeritus, University of California, was named recipient of the Arthur T. McCormack award by the Association of State and Territorial Health Officers at the annual meeting of the Association in Atlantic City last November. The honor was in recognition of Dr. Halverson's "distinguished service in the fields of local, state and international health."

* * *

The Fifth Annual Interim Scientific Meeting, **Phi Lambda Kappa Fraternity,** will be held at Desert Inn, Las Vegas, Nevada, March 19 to 26. The five day scientific program will be for the benefit of the general practitioner and will feature papers and symposiums by specialists in their fields. For registration and information, write Dr. Samuel L. Lemel, national secretary, Phi Lambda Kappa, 1030 Euclid Avenue, Cleveland 15, Ohio.

* * *

A three-day conference on **Practical Management of Poliomyelitis** will be presented in San Francisco and San Leandro February 27 through March 1 by the University of California School of Medicine and Medical Extension in cooperation with the Fairmont Hospital Poliomyelitis and Rehabilitation Center in San Leandro.

Enrollment is open to graduates of approved medical schools, nurses, physical therapists, occupational therapists and social workers actively engaged in poliomyelitis therapy. The fee is $50.

Discussions will be devoted to early diagnosis and therapeutic measures, nursing care principles, and the psychiatric impact on the patient and family, supplemented by demonstrations of physical therapy techniques and orthopedic devices.

On February 27 and 28 the conference will meet at the University of California Medical Center, San Francisco. The March 1 session will be conducted at the Fairmont Hospital, San Leandro.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Fractures, Tuesdays, February 19 through March 26, 1957. Twelve hours. Fee: $30.00.

Sterility. Guest speakers: I. C. Rubin, M.D., New York, and M. B. Davis, M.D., Chicago. March 8 and 9. Thirteen hours lectures, three hours clinic.

The Pharmacological Basis of Therapeutics. Wednesdays, March 13 through May 8. Eighteen hours. Fee: $50.00.

Preventive Psychiatry in Pediatric Practice. Thursdays, March 21 through June 6. Twenty-four hours. Fee: $50.00.

Diagnosis and Management of Benign and Malignant Lesions of the Head and Neck. Wednesday, March 27. Six and one-half hours. Fee: $17.50.

Abdominal Pain. Wednesday, April 3. Six hours. Fee: $17.50.

Minor Surgery. Saturday, April 6. Six hours. Fee $17.50.

Inhalation Therapy. Wednesday, April 24. Six hours. Fee: $17.50.

Dissection of Extremities. Mondays, April 29 through June 10. Seventeen hours.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Seminars in Medical Technology. Tuesday evenings, February 19 through April 2. Fee: $15.00.

Practical Management of Poliomyelitis. February 27, 28, and March 1.*

Ophthalmological Conference on Glaucoma. February 28 and March 1. Fee: $50.00.

Symposium on Cerebral Palsy. Seven hours. March 2. Fee: $5.00.

Course for General Practitioners. Monday through Friday, March 4 to 8, Mount Zion Hospital. Thirty hours. Fee: $70.00.

Current Cardiac Concepts and Practice. Mornings, April 1 to 5. Fifteen hours. Fee: $45.00.

Electrocardiography in Daily Practice. Afternoons, April 1 to 5. Twenty hours. Fee: $45.00.

Clinical Advances in Diagnosis and Treatment of Metabolic and Endocrine Diseases. March 28 to 30. Fee: $50.00.

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

*Fees to be announced.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

Postgraduate Conference in Ophthalmology. March 18 to 22.

Contact: Lowell Rantz, M.D., Director, Postgraduate Programs, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15. WEst 1-8000, Extension 207.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: $65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 6767 Sunset Blvd., Hollywood 28, Calif.

Sacramento Valley Circuit Courses for Dunsmuir, Chico, Marysville and Auburn, in cooperation with Stanford University School of Medicine. Spring series begins week of March 4.

North Coast Circuit Courses for Eureka, Ukiah and Napa, in cooperation with University of California, San Francisco. Spring series begins week of March 4.

West Coast Circuit in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

West Coast Counties in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel. Chairman: Edwin W. Tucker, M.D., 1073 Cass Street, Monterey.

San Joaquin Counties in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

North Coast Counties in cooperation with Stanford University, April 11 to 12, 1957, Santa Rosa, place to be announced. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

Sacramento Valley Counties in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

Medical Dates Bulletin

FEBRUARY MEETINGS

Colorado State Medical Society Mid-Winter Clinical Session, Shirley-Savoy Hotel, Denver, February 19 to 22. *Contact:* Harvey T. Sethman, executive secretary, 835 Republic Building, Denver 2, Colorado.

Ninth Annual Mid-Winter Radiological Conference sponsored by Los Angeles Radiological Society. Biltmore Hotel, Los Angeles, February 22 and 23. *Contact:* Louis J. Bonann, M.D., 1245 Glendon Avenue, Los Angeles 24 for dinner reservations; or Nathan M. Spishakoff, M.D., 405 North Bedford Drive, Beverly Hills.

State Board of Medical Examiners Oral Examination, Los Angeles, February 23.*

State Board of Medical Examiners Written Examination, Los Angeles, February 25 to 28.

American College of Chest Physicians Postgraduate Course on Diseases of the Chest. February 25 through March 1, 9 a.m.-5 p.m., Mark Hopkins Hotel, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11.

MARCH MEETINGS

Medical Advisory Board, United Cerebral Palsy Association all day Symposium on Cerebral Palsy, San Francisco, March 2. Guest speaker: Dr. Samuel P. Hicks, Pathologist, Harvard Medical School. *Contact:* Mrs. Marjorie E. Brush, executive director, 47 Kearny St., San Francisco 8 or phone EXbrook 2-1862.

Society of Graduate Surgeons of Los Angeles County Hospital Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

College of Medical Evangelists School of Medicine Annual Alumni Postgraduate Convention. Refresher courses, White Memorial Hospital, March 10 and 11; Scientific Assembly, Biltmore Hotel, March 12 to 14, both in Los Angeles. *Contact:* Walter B. Crawford, managing director, Alumni Postgraduate Convention, 316 N. Bailey St., Los Angeles 33, or telephone: ANgelus 2-2173.

Children's Hospital, San Francisco postgraduate course on The Newborn, Nurses Auditorium, 3801 Sacramento Street, March 23. *Contact:* Medical Extension, University of California Medical Center, 2nd and Parnassus, San Francisco 22.

Cancer Commission, California Medical Association, Cancer Conference for Tulare County Medical Society, March 28.§

California Tuberculosis and Health Association and the California Trudeau Society Joint Annual Meeting, Hotel Statler, Los Angeles, March 28 to 30, 9 a.m to 5 p.m. *Contact:* E. L. Daggett, Director, Public Information, 130 Hayes St., San Francisco 2, or telephone HEmlock 1-8771.

Cancer Commission, California Medical Association, Cancer Conference for Los Angeles County Medical Association, March 31.§

APRIL MEETINGS

Letterman Army Hospital "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.‡

Cancer Commission, California Medical Association, Cancer Conference for Marin County Medical Society, April 4.§

International College of Surgeons, Regional Meeting, Las Vegas, Nevada, April 8 and 9. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

Cancer Commission, California Medical Association, Cancer Conference for Ventura County Medical Society, April 9.§

California Society of Anesthesiologists, Inc., Annual Meeting, Sun Valley, Idaho, April 9th. *Contact:* Francis E. Guinney, M.D., secretary, 2790 Monte Mar Terrace, Los Angeles 64.

*NOTE: In regard to the dates of oral examinations, applicants are requested *NOT* to arrange to come to an oral examination until they receive a notice of the action of the Credentials Committee advising them of the time and place to appear.

‡ *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

§ *Contact:* Walter E. Batchelder, M.D., Medical Director, Cancer Commission, Suite 816, 450 Sutter St., San Francisco.

United States-Mexico Border Public Health Association Fifteenth Annual Meeting, April 9 to 12, San Antonio, Texas. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

Valley Children's Hospital Spring Clinics, Roosevelt High Auditorium, Fresno, April 12-13. *Contact:* Valley Children's Hospital, Millbrook and Shields Avenue, Fresno.

Cancer Commission, California Medical Association, Cancer Conference for Kern County Medical Society, April 16.§

San Francisco Heart Association Nurses Institute on the Care of the Cardiac Patient, April 17 and 18, 8:30 a.m. to 5 p.m., San Francisco. *Contact:* Mr. Lawrence Kramer, Executive Director, San Francisco Heart Association, 604 Mission Street, San Francisco, or telephone: YUkon 2-5753.

Cancer Commission, California Medical Association, Cancer Conference for San Luis Obispo County Medical Society, April 20.§

Letterman Army Hospital "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

Cancer Commission, California Medical Association, Cancer Conference for Merced County Medical Society, April 25.§

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

SUMMER AND FALL MEETINGS, 1957

Cancer Commission, California Medical Association, Cancer Conference for Napa County Medical Society, May 8.§

California Heart Association Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

Western Branch, American Public Health Association annual meeting, Lafayette Hotel, Long Beach, May 29 and June 2. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

Children's Hospital of the East Bay Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

State Board of Medical Examiners Oral Examination, San Francisco, June 15.*

Idaho State Medical Association 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

State Board of Medical Examiners Written Examination, San Francisco, June 17 to 20.

Wyoming State Medical Society Rocky Mountain Medical Conference Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

Colorado Division, Cancer Society Rocky Mountain Cancer Conference, 9 a.m., July 10 and 11. Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., Chairman, 835 Republic Bldg., Denver 2.

State Board of Medical Examiners Oral Examination, Los Angeles, August 17.*

State Board of Medical Examiners Written Examination, Los Angeles, August 19 to 22.

Washington State Medical Association Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

Nevada State Medical Association Annual Meeting, Las Vegas, September 25 to 28. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

San Francisco Heart Association 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

First Western Industrial Health Conference, Biltmore Hotel, Los Angeles. October 4 to 6. *Contact:* E. J. Zaik, M.D., secretary, Western Industrial Medical Association, 740 South Olive Street, Los Angeles 14.

California Society of Internal Medicine Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

INFORMATION

Freedom in Medical Practice

DWIGHT H. MURRAY, *M.D.*, Napa
President, American Medical Association

ALMOST SIX MONTHS have elapsed since we last met to deliberate and act on medical affairs. The time has passed quickly, but not quietly.

The rumble of war and revolution has resounded in our ears. The din from political battles has heen deafening.

All of us . . . sooner or later . . . learn that today's events do not just swirl around us, but involve each of us. As doctors we cannot get away from them by claiming that our only interest is in the sick, and that we cannot be hothered by political, social and economic problems. These matters demand attention from the doctor as well as the lawyer, the businessman, the newspaper editor, the labor leader and the worker.

If we are concerned about what happens on the international, national and local fronts—and we should he—then certainly we cannot afford to be uninterested in what happens in our own area of health and medical affairs. Yet there is apathy in our ranks.

REPLACE APATHY WITH ACTIVE, UNITED PROFESSION

Today there is a greater need for a united, forceful and informed profession than ever before. Wc have been caught in the throes of a social revolution which demanded something for nothing. Changes have been taking place all around us, and medicine has not escaped unscathed.

For example, in a few days Public Law 569, the bill providing medical care for military dependents, becomes effective throughout the land. Contracts already have been signed with the government by the majority of our state societies. No longer can any doctor claim that this law does not affect him. No longer can he say that government laws really are not changing the practice of medicine.

Public law 880, better known to all of us as H.R. 7225, is another case in point. Medicine now is facing the problem of protecting the taxpaying public from abuses and of coopcrating with the government to carry out the provisions of the law. The law is now on the hooks, and we must provide the leadership nccessary to make it work as well as possible.

It was encouraging to hear Ezra Taft Benson, secretary of agriculture, say last week before the American Association of Land Grant Colleges and Universities:

"Sooner or later, the accumulation of power in a central government leads to a loss of freedom. . . . Raids on the federal treasury can be all too readily accomplished by an organized few ovcr the fecblc protests of an apathetic majority. With more and more activity centered in the federal government, the relationship between the cost and the benefits of government programs becomes obscure. What follows is the voting of public money without having to accept direct local responsihility for higher taxes . . .

"If the present shift of power from state to federal authority which started 25 years ago is allowed to continue, the statcs may be left hollow shells."

It was encouraging to hear such comments from a member of the President's cabinet. I only wish that all members of the official family, and more important, every memher of the United States Congress, felt the same way.

The expression of this philosophy, with which medicine so heartily agrees, sounds good, but putting it into practice is the thing we are really interested in.

Today the medical profession along with business and industry is caught between those who desire to promote sound government and those who desire even more intensely to perpetuate party power. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedom. Medicine must do its utmost to reverse this trend.

MEDICAL FREEDOM ESSENTIAL

In my travels around the country as your representative the last 18 months, I have seen little dissension or rancor within our ranks. However, I must report that I have seen too much complacency over governmental encroachment into medical affairs. And I am deadly serious when I say to you that apathy by the few, or by the many, can be detrimental to all.

No nation can merely reap the benefits of freedom; it also must sow seeds of freedom.

In medicine the situation is the same. If an apathetic medical profession takes its freedom for granted, it will be the beginning of the end. A

Delivered at the opening session of the House of Delegates at the clinical meeting of the American Medical Association in Seattle, Washington, November 27, 1956.

strong, free profession must work for freedom so that it may live in freedom. And history tells us that once medicine loses its freedom, other fields of private endeavor are immediately in danger.

I do not wish to paint a dark or distorted picture of medicine's free status and its stature in America today. But I do believe words of caution and an appeal for vigilance are in order.

The road of apathy and disunity can only lead to disorder and perhaps disintegration, and we must sound a warning to all our colleagues who don't care, or who are pulling in the opposite direction. The road of alertness, action and unity is the proper road for all of us to be traveling together.

If I had just one wish for the coming year, it would be to command the time and talents of the 160,000 physicians in the American Medical Association. I would set us all to the task of emphasizing and reemphasizing the absolute necessity of patient and professional freedom.

PATIENT'S RIGHT TO CHOOSE HIS DOCTOR

I believe it is one of our prime responsibilities to prove to our patients that their right to choose their doctor is a most important one.

Free choice brings a bond of confidence between doctor and patient which no compulsory medical system can create. It means that the patient knows the physician will be interested in him as a person, not as just a serial number of the 2:45 appendicitis case.

For the doctor free choice means that the patient has selected him for his abilities, training, sincerity and personality. When a patient comes into my office, I know he has made a choice. And from that moment there begins a physician-patient relationship of the highest order. To me the patient is someone special, and I in turn hope I am someone special to him.

Once the patient has made his choice, the physician automatically assumes an unqualified responsibility to the patient. No system of medical care that uses a third party to bring doctor and patient together can match our kind of cooperative performance for the treatment of illness, the cure of disease and the betterment of the patient's health.

Freedom to select a doctor is part of everyone's great freedom to choose—to choose what he wears and eats; where he works and worships, and how he votes. Take away any part of this freedom and great damage is done to our democratic system.

FREE CONDUCT IN MEDICAL TREATMENT

Another freedom closely tied to freedom of choice is freedom in the conduct of medical treatment.

At the recent meeting of the World Medical Association in Havana, Cuba, Dr. Rolf Schloegell of Germany made a stirring defense of free conduct of medical treatment. He told us that the medical profession believes the attending physician alone is competent to decide what measures he deems necessary and will apply in order to bring about the desired improvement. He warned too of the danger of excessive restriction on the freedom of the patient and the attending doctor.

Yet the trend toward extending social security in the medical care field has been steady and has accelerated since the end of World War II.

The dangers of shifting responsibilities for medical care from the patient and doctor to the government are obvious. The caliber of medical care cannot be as high when both patient and doctor are dependent upon government. Initiative succumbs to dictation, and self-reliance is replaced by the crutch of government.

We do not deny that there is an area of legitimate concern by the government for the health and welfare of the people. But each year government seems to extend that area. We get some idea of this expansion from the new federal medical budget.

This year, according to our Washington office, the average family will be paying $54.61 for the U. S. government's health and medical activities. And the total expenditures this year amount to 2½ billion dollars—290 millions more than last year. Even in an over-all federal budget of 61 billion dollars, the total health cost of 2½ billions is not insignificant. It is a billion dollars more than the cost of running the Commerce Department, half a billion more than the Agriculture Department and six times more than the Interior Department's budget.

Many expenditures obviously are necessary to keep up our unsurpassed public health standards, and research may pay rich dividends in scientific discoveries. But there is no doubt that much money is being spent on medical activities that should not involve government participation.

The trend is to spend more and more government money on health and medical matters because it is good politics. Apparently many Americans still want to see government in the role of a big brother, dishing out so-called gifts and bargains under the guise of benevolent economic planning.

I believe it is our duty, as it is everyone else's, to combat the attitude of "what's in it for me?" and to promote the long-honored creed of "what's best for all Americans and our free society?" I think that a nation can drift into state medicine inch by inch just as surely as if the scheme were foisted upon a

people overnight. The "drift" method may take longer but the result will be the same.

So it is time all of us sounded the alarm against soft and superficial security and against the invasion of personal responsibility. It is time we stood up together for militant freedom and for full rights and responsibilities of the individual.

BELGIAN DOCTORS TURN BACK GOVERNMENT

There is no better example of what a unified medical profession can do than in the story of the recent fight of the Belgian doctors against the government's proposals for a state service of medicine.

Without consulting the medical profession the Belgian government proceeded to draft rules and regulations of health to be incorporated in the nation's social security legislation. Under the proposals doctors were to sign an agreement to abide by the present rules and any later regulations. For the patient there would be the usual red tape in getting medical care.

When the Belgian doctors learned of the scheme, they met in conference with the government. They told the government what they wanted and what they would not accept. The government agreed.

For several months everything was quiet. Then the Belgian doctors suddenly read about the new health bill that the government was sending to Parliament. It was quite contrary to the earlier agreement worked out by the profession and the government. But the bill was passed quickly.

The Belgian medical profession protested and said it would not be placed under the Ministry of Labor. Instead the doctors proposed to set up their own plan of medical assistance.

Before long, the government saw that the medical profession meant business and that the doctor's plan was an attractive one. So it declared that its own bill was not in force and could not be in force without the consent of the medical profession.

To me this fight against legislative intervention in medical care is excellent evidence that the profession can defend itself if it unites to defend the basic principles of freedom and if it offers constructive proposals. By using the Belgian national motto, "in union there is strength," the medical profession showed doctors everywhere that dangerous government plans can be turned aside by the strong.

I also read recently in the *Journal of the World Medical Association* of the fight of the medical profession of Malta against a British government scheme to introduce a full-time salaried medical service, without the right of private practice, on the island dependency of Malta. Here again the doctors reacted with unity and strength, and successfully thwarted the government's plan.

There is a lesson in these stories from Belgium and Malta. They prove that a unified profession has a great political power for good—the good of the patient, the doctors and the nation.

CONFIDENCE AND UNDERSTANDING NEEDED

While we are developing unity within our own ranks, I believe it is equally important to continue to build up the confidence and respect of our patients and to make our legislators aware of the necessity for freedom in medical practice.

Let us never reduce the quality of service we render to our patients, and never lose the personal touch in medicine. Where there is any opportunity to improve upon our medical care, let us seize it and show our abilities to do an outstanding job. Satisfied patient-customers will give us deserving support when we need it.

We also should realize that the destiny of medicine can be determined to a large degree in the halls of Congress. If this be true, then it is even more important that we take an even greater interest in those who elect the Congressmen. Sympathetic understanding of our position by federal legislators through the voting public will be an insurmountable deterrent to the forces supporting state medicine.

The day has come, gentlemen, when we can no longer look upon medical economics and social changes merely as issues to be considered during our limited leisure hours. Our interest in them cannot be superficial or intermittent.

We now must pay daily attention to these matters. Medical socioeconomic affairs can no longer be just incidental with us. They must be a vital part of our life and of our profession.

Each of us, I believe, should dedicate himself to the words included in the oath of office taken by presidents of the A.M.A.

"I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans."

As doctors, representatives to the A.M.A. and as spokesmen for the A.M.A., let's remember these words and live by them. And to alter a phrase of President Lincoln's only slightly: Let's make common cause to keep the good ship of medical freedom on this voyage, or nobody will have a chance to pilot her on another voyage.

Family Polio Vaccination in California in Mid-1956

In mid-1956 the California State Department of Public Health conducted a statewide household sample survey in part for the purpose of collecting information on the poliomyelitis vaccination history of each household member and the attitude of the mother toward poliomyelitis vaccine. In an analysis of this information, these data are related to the social and economic characteristics of each household.

The sample included some 3,500 households, containing about 11,000 persons, or about one household out of every 1,200 in the state. Although information on poliomyelitis vaccine was collected from the entire sample, the tabulations reported by the department in an unpublished manuscript* are restricted to persons 0 to 14 years of age, a group to which the vaccine had been available from either private physicians or public clinics for about eight months before the survey. The sample contained 3,342 children under 15 years of age.

Preliminary analysis of the survey data taken in mid-1956 reveals that:

1. Forty-two per cent of the 3,342 children under 15 years had received their first poliomyelitis vaccination; 58 per cent had not been vaccinated against poliomyelitis.

2. Poliomyelitis vaccine was favorably regarded by 81 per cent of the mothers of children under 15. For mothers of children who had been vaccinated, 97 per cent were favorable, 2 per cent neutral and 1 per cent unfavorable. For mothers of children who had not been vaccinated, 65 per cent were favorable, 11 per cent were neutral and 22 per cent were unfavorable.

3. The most frequent reason for nonvaccination given by mothers favorable toward the vaccine was that the injections were not offered their children in school, or their doctors did not tell them the vaccine was available. The second most frequent reason was that of a simple lack of motivation; the mother just had not gotten around to it or had not thought about it.

4. Children who were vaccinated tended to come from white families in the higher income brackets, having 2 to 4 children. They also tended to have mothers with 12 or more years of education and/or fathers in white collar occupations. In families earning less than $2,000, 83 per cent of the children under 15 had not been vaccinated. as compared with 47 per cent who had not been vaccinated in families earning more than $8,000.

5. Private physicians vaccinated one per cent of the children from families having less than $2,000 annual income, but 34 per cent of the children from families having incomes of $8,000 or greater.

6. Comparatively few children from households having more than 3 children in the 0 to 14 age group were vaccinated in physicians' offices.

The State Department of Public Health emphasizes that there is still a high percentage of nonvaccination among some of the age groups most susceptible to poliomyelitis. and concludes that persons in these age groups who will be most resistant to obtaining immunization will probably be socio-economically similar to the nonvaccinated population found in the survey.

*Being submitted to Public Health Reports for publication

THE PHYSICIAN'S *Bookshelf*

HOW TO REDUCE SURELY AND SAFELY—Herbert Pollack, M.D., McGraw-Hill Book Company, Inc., New York, 1955. 157 pages, $2.95.

With the current fad for losing weight in full swing, any "How To" book with the word "Reduce" or "Diet" in it stands a good chance of getting on the best-seller list today. Unfortunately, too many of the books which are published are written by quacks and fakes. Such is not the case with the author of "How To Reduce Surely and Safely." Dr. Pollack writes with far more soundness than most of the health-fad writers. He has an excellent chapter which points up the fallacies of diet fads and fakes. There are also appendices which list calorie values and low-calorie menus.

However, he sometimes falls into the very pitfalls for which he rightfully criticizes the quack, and he writes too much in their style, with an assumption of exactness that is often unjustified. He has a pet phraseology, with repetition of such phrases as "Your Safe and Sure Diet," which is rather offensive to the medical reader. He describes as gospel certain probabilities such as "If you weigh 10 per cent less than your desirable weight you are underweight." On page 53 he states with pontifical authority, "You should consume one-fourth to one-third of your total calories at breakfast. Otherwise fatigue, irritability, dizziness, nausea and headache can take over about midmorning." And, immediately after that he would dispel wide-spread myths about breakfast He includes diets up to 3,000 calories in his reducing diets—originally based on an assumption that every individual is like every other individual in his utilization of energy—except that he falls into a rigid classification of light workers vs. heavy and moderately heavy workers (pages 58 and 59).

The book concerns physicians only as reading which may be of interest to his patients. On the whole it can be recommended as a handy little book which is better than most as a self-service guide to reduction of weight.

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CARDIAC PRESSURES AND PULSES—A Manual of Right and Left Heart Catheterization—Aldo A. Luisada, M.D., Associate Professor of Medicine; and Chi Kong Liu, M.D., Instructor of Medicine; both of The Chicago Medical School, Grune & Stratton, Inc., New York, 1956. 116 pages, $6.00.

After a brief introductory chapter on the events of the cardiac cycle the authors discuss the technic of cardiac catheterization, normal pressure patterns of the heart and great vessels, abnormal pressure patterns and artifacts. A concluding chapter presents formulas commonly employed in the calculations of blood flow, shunts, resistances and valve areas. A brief bibliography and an adequate index has been prepared.

However, the monograph is generally disappointing. Despite the publisher's advertisements stating that it reflects the authors' "extensive experience with cardiac catheterization," the material presented is limited. Much of the data has been obtained from the literature, many pressure curves from dogs are illustrated, diagrams are used where actual pressure curves would serve better, and human material is scanty. For example, their data on the normal pressure curves is derived from studies on only 7 humans and 6 dogs. Only one pressure tracing from the left atrium of the human subject is presented. The published tracings will be unfamiliar to most workers since heart sounds without simultaneous electrocardiograms are used for identification of pressure curves and pressure measurements are not indicated. Many will disagree with the authors' contention that a photographic recorder tracing simultaneous reference heart sounds is superior to a direct writer with a reference electrocardiogram for pressure recordings. Despite the authors' discussion of artifacts many of their tracings are seriously damped and should not have been published. The discussion of the events of the cardiac cycle is excellent and provides a proper introduction to any volume on pressure pulses. There is a distinct need for a monograph on this subject. This volume only partially fulfills that need and workers in the field must still turn to published papers and their own files for information on the normal and abnormal pressure pulses.

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CHRISTOPHER'S TEXTBOOK OF SURGERY—Sixth Edition—Edited by Loyal Davis, M.D., Chairman of the Department of Surgery, Northwestern University Medical School. W. B. Saunders Company, Philadelphia, 1956. 1484 pages, 1359 illustrations on 716 figures, $15.50.

Dr. Loyal Davis and 86 other distinguished authorities have revised the long-famous Christopher's Textbook of Surgery. For the new sixth edition the work has been completely reorganized and almost all chapters have been completely rewritten in an effort to bring the material up-to-date and along more practical lines. Every common surgical disease is considered under etiology, pathology, clinical course, diagnosis, treatment, techniques, pre and postoperative care, complications and prognosis. The factual content of the book is tremendous.

The book suffers from the same disadvantages as its predecessors, however, for it is too long and complicated for the student, yet inadequate for the practicing clinician, for its emphasis is as a standard textbook. The integration of the material is rather well-done, but it is difficult to unify into one work the concepts of 86 different contributors, each anxious to completely develop his chosen field of discussion.

New material predominates throughout the book. The vascular system, endocrine system, chemotherapy, treatment of soft tissue injuries and burns, preoperative and postoperative care are discussed in a thoroughly modern fashion, differing from many other books. The illustrations are new and good, and have been carefully selected.

This is a good standard textbook of surgery, and can be recommended for students ultimately headed into surgery, general practitioners with a surgical interest, and surgeons.

THE MORPHOLOGY OF HUMAN BLOOD CELLS—L. W. Diggs, M.A., M.D., Professor of Medicine and Director of Medical Laboratories, University of Tennessee; Dorothy Sturm, Instructor, Memphis Academy of Arts; and Ann Bell, B.A., Instructor in Medicine, University of Tennessee. W. B. Saunders Company, Philadelphia, 1956. 181 pages, 31 color plates, 54 figures, $12.00.

This book is in two sections. The first is a series of 30 pages of color illustrations, and the second is a hundred pages of text, black and white and color illustrations, diagrams and photographs. The newly adopted hematologic nomenclature is employed together with common synonyms.

The water color illustrations by Dorothy Sturm are very good. They were originally published by the Abbott Laboratories in *What's New* and later as a monograph. One of the best features is the section with plates and text on the fixed tissue cells of the bone marrow and miscellaneous pathologic cells. This material is hard to find elsewhere in one volume.

The main defect (as in photomicrography) is in reproducing nuclear detail. The nucleus of the hypochromic microcytic rubriblast looks more like a P.A. type than the one illustrated. The nuclei of the monocytic series appear diagrammatic and are not too good. The test of a good picture is its being identified without recourse to the text. There is no atlas, photographic or otherwise, which meets this test. Despite any shortcomings of the illustrations, with the use of the text, one gets as good an idea of morphology from this book as is available from the printed page.

The text is complete but very readable. There is a small section on technique. The beginner may take encouragement in learning that every cell cannot be classified, and one must frequently identify a cell by the company it keeps.

The book is printed on fine quality paper and the workmanship is excellent. The pages are bound in metal rings so that the book opens flat.

Of the atlases and books on morphology of blood cells published in the past decade, this is one of the best. It will find great favor with medical students, laboratory technicians, general physicians, pathologists and hematologists. It is highly recommended.

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ORGANIZED HOME MEDICAL CARE IN NEW YORK CITY—A Study of Nineteen Programs by the Hospital Council of Greater New York. Published for the Commonwealth Fund, by Harvard University Press, Cambridge, Mass., 1956. 538 pages, $8,00.

This work is an evaluation of the organized plans existing in New York City for extending comprehensive medical care to the long-term patient in his home. The volume reports in full a study of the nineteen experimental plans in New York City by the Hospital Council of Greater New York City. The report points out that the patient with chronic illness is often beset by social, economic, emotional and domestic problems and that, to the patient, these problems may be as great as the illness itself. To provide comprehensive medical care to patients with such complex problems requires a dynamic plan of management with the home, the outpatient department, the hospital and other institutions being utilized when specifically indicated. Home care, therefore, is actually only one modality to be employed when appropriate for those patients whose care is better provided in his familiar home surroundings. It is not a substitute for hospital care nor is its purpose to reduce hospital bed occupancy. As an additional facility, it broadens the scope of available medical services in a community.

The report analyzes the kinds of patients served by home care programs, their diagnoses, and even their comments on the services rendered. It compares the different programs and considers in detail the problems of personnel and administration, the relation of home care to hospital care, and the costs involved. It sets forth the recommendations of the Hospital Council for a complete home care program as well as specific plans for a more complete home care plan for New York City.

This book will serve as a valuable reference and resource book for those interested in this subject. The recommendations as well as the data contained in the volume will be of great interest to all of those who are concerned with the planning, organization or administration of home care programs throughout the country.

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A MANUAL OF THE COMMON CONTAGIOUS DISEASES—Fifth Edition, Thoroughly Revised—Philip Moen Stimson, A.B., M.D., Professor of Clinical Pediatrics, Cornell University Medical College; and Horace Louis Hodes, A.B., M.D., Clinical Professor of Pediatrics, Columbia University College of Physicians and Surgeons. Lea & Febiger, Philadelphia, 1956. 624 pages, 84 illustrations and 10 plates, 8 in color, $8.50.

This book will be of great value to any physician who must concern himself with the care of communicable disease. The relative infrequency of many of these diseases at the present time, especially in hospital practice, makes it necessary for much of the instruction of medical students to be largely didactic and for the average physician to depend on a minimum of personal experience. The breadth of their own experience in this field has enabled the authors to present vivid descriptions of these entities in a most informative manner.

Diagnostic criteria, differential diagnosis, essential laboratory procedures, and details of management are presented with admirable clarity and readability. The information is explicit without being dogmatic. There is the refreshing absence of carry-over of traditional concepts which are so frequently carried on from one text to another.

Details of laboratory advances in this field—virology, bacteriology, serology and pathology—are up to date to the very moment of publication.

The discussion of therapeutic preparations, vaccines, serums, antibiotics, corticosteroids will be extremely useful beyond the scope of the purely contact infections. The writers have not hesitated to abandon methods of treatment which they believe to be of little practical or theoretical value simply because these may have been endlessly proposed in the past.

Suggestions for the management of these diseases in the general hospital, the communicable disease unit, and in the home are of great practical value and in many respects depart from many of the meaningless and cumbersome methods sometimes proposed and which fail because of their very intricacy of performance.

Scarlet fever is discussed in combination with the streptococcal diseases, the meningitides are dealt with as a group, poliomyelitis is detailed in a manner which is astonishing in so small a volume.

This book has a place in every hospital library as well as in the hands of every physician who has any interest in the subject matters.

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PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION—Patterns and Techniques—Margaret Knott, B.S., Head Physical Therapist; and Dorothy E. Boss, B.Ed., Assistant Head Physical Therapist, California Rehabilitation Center, Vallejo. Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, N. Y., 1956. 135 pages, $5.50.

This is essentially a technical manual for physical therapists. As such it seems quite competently written with explicit directions for a variety of exercises. The neurophysiological concepts on which the rationale of these exercises is supposed to be based cannot claim universal or even general acceptance, but this does not detract from the practical value of the book for the physical therapy technician.

ANNUAL REVIEW OF MEDICINE—Volume 7—1956—David A. Rytand, Editor and William Creger, Associated Editor, both from Stanford University School of Medicine. Annual Reviews, Inc., Stanford, Calif., 1956. 611 pages, $7.00.

The reviewer is favorably impressed by volume 7 of the Annual Review of Medicine even as he was by volume 6 which appeared in 1955. The different sections are written by authors who have provided thoughtful and useful reviews of important advances in selected areas of medical knowledge. Although the average physician may not keep this volume in his own library, it can be highly useful as a point of departure whenever he wishes to look up recent literature on a given subject. The subjects are not covered in complete detail, but in a responsible and broad enough way to make developments readily available.

In spite of this, this group of abstracts, as others, falls behind in one important respect: Their most recent literature is one or more years old before it can possibly reach the reader; e.g., in the case of this volume, which arrived for review at the end of June 1956, the articles included only literature published prior to a date varying from March to October 1955.

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CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY—Third Edition—Bernard S. Lipman, M.D., Instructor in Medicine, Emory University School of Medicine and Edward Massie, M.D., Associate Professor of Clinical Medicine, Washington University School of Medicine. The Year Book Publishers, Inc., 200 East Illinois St., Chicago, 1956. 397 pages, $7.50.

As in the past, the third edition of this book remains an eloquent introduction to the field of electrocardiology. In simple didactic language and diagrams, it illustrates the genesis of the various patterns encountered in electrocardiography. However, in any compilation of data, certain errors are noted. For example, under interarterial septal defects of the secundum type, the author states the electrocardiographic changes are indefinite, whereas most of these patients have electrocardiograms which show incomplete or complete right bundle branch block. The importance of the ventricular activation time in V_1 in infants is omitted. Some of the electrocardiograms are subject to different interpretations. However, this book remains an excellent introductory study for the beginner in electrocardiography.

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LYSERGIC ACID DIETHYLAMIDE AND MESCALINE IN EXPERIMENTAL PSYCHIATRY—Proceedings of the Round Table, American Psychiatric Association, 1955—Edited by Louis Cholden, M.D., Chairman, Assistant Clinical Professor of Psychiatry, UCLA School of Medicine. Grune & Stratton, New York, 1956. 85 pages, $3.00.

This is a small book of 85 pages which give "The Proceedings of the Round Table on Lysergic Acid Diethylamide and Mescaline in Experimental Psychiatry, held at the annual meeting of the American Psychiatric Association, May 12, 1955." Twelve different speakers participated, following which there were questions and discussion by the audience, followed by answers and final statements by the members of the panel.

Psychiatry has been greatly interested in drugs that seem to artificially reproduce a specific type of mental disorder, and recently there has been a great deal of study and research on a number of such drugs, particularly those that produce a schizophrenic-like reaction. It is felt by many that if one artificially produces such reactions by these various drugs and then studies in great detail what occurs we will get some real understanding of what schizophrenia is. The papers presented deal mainly with LSD-25, Frenquel and Mescaline. The different papers may discuss one of these drugs from a pharmacological or psychiatric point of view. One paper discusses the use of lysergic acid in the treatment of mental disorders. There is a five-page discussion of Mescaline and the "Other World," by Aldous Huxley, who participated in this discussion. Most of the other contributors are psychiatrists. The book can be recommended for any one who wishes to read about these newer drugs that produce psychotic-like reactions.

* * *

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS—Sixth Edition—John Albert Key, B.S., M.D., Clinical Professor Emeritus of Orthopedic Surgery, Washington University School of Medicine, St. Louis; and H. Earle Conwell, M.D., Associate Professor of Orthopedic Surgery, University of Alabama School of Medicine, Birmingham. The C. V. Mosby Company, St. Louis, 1956. 1168 pages, $20.00.

The sixth edition of this old standard American Text on the Treatment of Fractures is a further improvement upon its predecessors. This has been a standard work in its field since 1934. Its format has not changed, simply the material has been altered and illustrations changed in many respects.

The section having to do with compound injuries and treatment of infections has been altered appreciably and definitely improved in this new edition.

The section having to do with treatment of fractures of the forearm has been altered and improved also. It is to be regretted that the old illustrations are still used in the current text, however, demonstrating the use of wire loop fixation for fractures of the forearm.

The section on fractures of the hand has been appreciably improved by changes in the text to conform to the later techniques and thinking of treatment of these injuries from a functional, rather than an x-ray, viewpoint.

The section on fractures of the hip, particularly dealing with the reconstructive procedures and with the fracture dislocations of the acetabulum, has also been altered to improve the quality of the work generally.

This book has always been noted for its conservative approach and the sixth edition reflects further credit to the authors in continuing their conservative approach, but showing their own excellent judgment in including the newer techniques which have proved to be of value. The book has been very worth while in the past years, since its original publication, the sixth edition has sufficient improvement to increase its value and stature both.

* * *

EPILEPTIC SEIZURES—A Correlative Study of Historical Diagnostic, Therapeutic, Educational, and Employment Aspects of Epilepsy—John R. Green, M.D., and Harry F. Steelman, M.D., The Williams and Wilkins Company, Baltimore, 1956. 165 pages, $5.00.

This short volume of 160 pages is made up of a group of papers given at a joint meeting of the Western Institute of Epilepsy, the Western EEG Society and the American Academy of General Practice, Arizona Chapter held in Phoenix, Arizona, in 1955. It is divided into four parts: (1) The diagnosis of epileptic seizures, (2) the treatment of epileptic seizures, (3) education of the epileptic patient, and (4) employment and rehabilitation aspects. The different chapters vary a great deal in method of presentation as would be expected with the variety of workers involved. Dr. Wilder Penfield has contributed several chapters setting forth its particular outlook on epilepsy. There is no question but that all subjects presented can be found in better form elsewhere. On the other hand the particular choice of topics has been very good so that the subject of epilepsy has been covered quite adequately. For this reason, the book can be recommended to the general practitioner who cares for some epileptics in his practice and can probably be recommended to the families of patients who have epilepsy. In the latter regard, the only word of caution lies in the rather optimistic presentation of the surgical treatment of this condition resulting from the undue proportion of surgical authorship.

DISEASES OF THE BREAST—C. D. Haagensen, M.D., Professor of Clinical Surgery, The College of Physicians and Surgeons, Columbia University. W. B. Saunders Company, Philadelphia, 1956. 751 pages, 404 figures and 25 charts, $16.00.

This handsome textbook is an exhaustive review of the anatomy, physiology, physical examination and diseases of the breast based on the long experience of the author and of the accumulated data at the Columbia-Presbyterian Medical Center in New York during the interval 1915 to 1955. The book will be of considerable value to those who have a special interest in diseases of the breast because of the wealth of statistical data which is included and the thoroughness with which the literature has been reviewed, resulting in a bibliography which has not been equaled in any recent textbook. Chapters of particular value to those who are interested in highly detailed knowledge of the breast are those sections of the book which deal with the more esoteric diseases of the breast. There are also admirable chapters on the natural history of breast carcinoma, as well as a good discussion of special pathological forms of carcinoma of the breast.

Unfortunately the reviewer cannot recommend the text either for use by medical students or for those who have something less than a professional obsession with the subject of carcinoma of the breast. A textbook of 751 pages on diseases of the breast is obviously too prolix for general use. In addition, in spite of his wide knowledge of the natural history of carcinoma of the breast, the author has developed some obsessive convictions concerning the management of mammary carcinoma which are in sharp contrast to the teaching and practice in most medical centers. Doctor Haagensen is now advocating still further restrictions in his definition of operability, in an unrealistic attempt to limit radical mastectomy to those women who are genuinely curable. In addition to the rather exacting criteria previously published by Haagensen and Stout, the author is now doing a "triple biopsy" as a preoperative measure, obtaining nodes from the supraclavicular area, internal mammary chain and the apex of the axilla. If any of the nodes so obtained show metastasis the patient is considered inoperable. Although the author is extremely concerned about a delicate approach to the tumor of the breast which may be cancer, and is severe in his criticism of needle biopsy, he seems to disregard entirely these admonitions when he invades the operative field in the axillary apex and disrupts lymphatics in the internal mammary chain. It also seems obvious that such a progressive contraction of the indications for radical mastectomy will deny the palliative benefits of the operation for many women, even though they succumb in later years to the disease after remote metastasis becomes evident.

The author also continues to insist upon the alleged value of extremely thin skin flaps far beyond the site of the primary lesion, of the necessity of routine skin grafting and his belief that the operative time is a measure of the excellence of the procedure. The fact that Haagensen himself reports an incidence of local recurrence of 12 per cent following radical mastectomy seems to refute effectively the technical considerations which he so enthusiastically advocates.

* * *

PHYSICAL DIAGNOSIS—Fifth Edition—Ralph H. Major, M.D., Professor of Medicine and of the History of Medicine and Mahlon H. Delp, M.D., Professor of Medicine; both from the University of Kansas. W. B. Saunders Company, Philadelphia, 1956. 358 pages, 536 figures, $7.00.

This has been a successful text for teaching physical diagnosis to beginning medical students since the first edition appeared in 1937, and it will serve that purpose very well for quite a few years to come. The authors emphasize the importance of many things which are too infrequently emphasized. For instance, in their chapter on General Inspection, page 31, one finds "It is important that the patient be comfortable, but is equally important that the examiner be in a comfortable position." The chapter on Pain is selectively done and necessarily incomplete. One can wonder at its inclusion in a text devoted solely to physical diagnosis but one then realizes that the authors are attempting to include information on history as well as examination.

The reviewer objects to the term "vital signs" for the weight, height, temperature, pulse, respiration and blood pressure. He feels that these should be labeled simply as a part of the general examination and that they are no more "vital" than any of a dozen other signs.

As much as any text book we know, this book may be termed a "period piece," evocative of the good old days before scientific medicine began to displace the entertaining anecdotal literature that was the vogue in all good medical text books. It contains many cliches, anecdotes, epigrams. Above all its tone is set by its 500 odd illustrations packed into 328 pages. Here one may see a wide variety of pictures old and new—historical horror shots, ulcers and tumors, deformities of all kinds and exaggerations of disease conditions. Such a book is not often exhaustive but is more interesting than most. And, as such, it may be recommended for the teaching of physical diagnosis.

* * *

EPILEPSY AND THE LAW—A Proposal for Legal Reform in the Light of Medical Progress—Roscoe L. Barrow, Dean, University of Cincinnati College of Law, and Howard D. Fabing, M.D., Chairman, Legislation Committee, American League Against Epilepsy, Past-President, American Academy of Neurology. Hoeber-Harper, Paul B. Hoeber, Inc., 48 East 33rd St., New York 16, N. Y., 1956. 177 pages, $5.50.

The avowed purpose of this book is a partisan one to secure repeal of legislation unfavorable to the epileptic. As would be expected with such an approach, both sides of the question are not adequately represented. I am sure it will appeal to anyone in whose family there is an epileptic patient. There can be no doubt that some laws requiring sterilization of epileptics and prohibiting their marriages are obsolete and not based on sound clinical concepts. The criticism that the required reporting of epileptics to the Motor Vehicle Department drives epilepsy underground is well taken. It is not quite clear, however, how people with frequent seizures could be kept off the roads were this not required. The problem of the epileptic in industry is well presented with some practical suggestions as to limited liability of the employer which might well be put into effect. The book serves a useful purpose in providing factual data albeit somewhat biased in presentation for those interested in securing more favorable legislation for the epileptic. Certainly any move to take from the books laws which are outmoded and which are undoubtedly not enforced is a step in the right direction.

* * *

STUDIES IN TOPECTOMY—Edited by Nolan D. C. Lewis, M.D., Carney Landis, Ph.D., D.Sc., and H. E. King, Ph.D. Grune and Stratton, New York, 1956. 248 pages, $6.75.

The contents of this monograph which deals with the effects of the loss of various portions of frontal brain on behavior and bodily function in human beings consists of a series of studies constituting the report of the activities of the New York State Associates in Brain Research between June 1948 and April 1949. The material is treated from the standpoint of the surgical technique, neurophysiological studies, and psychological effects. With the waning popularity of psychosurgery, it is unlikely that in the future such a considerable amount of material will again be available for study, and thus this monograph has great value for the psychiatrist and the psychologist as well as for the neurophysiologist.

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Lindsay, J. R.: The Practical Management of Dizziness, California Med. 83:193 (Sept.) 1955.

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Flight of Hungarian Refugees

Two physicians—a 36-year-old urologist and his wife, a 30-year-old pediatrician—and their 3½-month-old son were among 72 Hungarian refugees who reached Chicago recently under sponsorship of Cardinal Stritch.

The 72 free fighters of Hungary were taken to the Palmer House where they received free board and lodging as guests of Hilton Hotels until they could be settled in private homes.

John L. Bach of the American Medical Association staff interviewed the two doctors, who requested that their last names be withheld for fear of Communist reprisals against relatives remaining in Hungary. Mr. Bach was accompanied to their hotel room by the Rev. Joseph Magyar, pastor of St. Stephen King of Hungary Church, who served as interpreter.

The two physicians, Laszlo and Elizabeth, who could speak some English, left Budapest on November 22 and arrived in Chicago three weeks later to the day. But the intervening three weeks were a nightmare.

Both were graduated from Budapest University and both were professors at the medical school. He served as a urological surgeon for 12 years; she as a pediatrician for six years.

In company with an agricultural professor from the same university, his wife and two boys, the two doctors and their baby set out for the Austrian border, 200 miles away, in a milk truck. The friendly driver took them to within a few miles of the border. The party walked less than a mile when they were captured by secret police guards and their real troubles began. They were taken to a barn where 60 other refugees were interned; they were kept there for two days and nights. There were no facilities of any kind, only trampled straw on the floor. A friend recognized the agricultural professor and his family and somehow managed to engineer their escape under the cover of darkness. The two doctors never saw their friends again after that night.

On the morning of the third day all of the refugees, including Laszlo and his wife, were herded into a truck which was to take them to a larger and more permanent Russian prison camp. As the truck was being unloaded near the camp, one of the refugees bolted and ran. The two guards took out after him and when they did the other refugees ran wildly in every direction—across fields, down roads and through woods.

"We ran and when we were tired we ran some more," said Dr. Elizabeth. She and her husband and the baby were befriended by a doctor they knew in a nearby city. He put them aboard a bus with other refugees heading for the border.

"The bus driver let us out at the border, but we soon learned that we still had a quarter of a mile to go," Dr. Elizabeth said. "We never knew when we actually crossed the border. We put the baby to sleep and walked and ran for three hours in the dark, always fearful that we might be going the wrong way. Finally we spotted the Austrian watch tower and knew we were safe.

"The baby came through the rough trip quite well, except for a large lacerated swelling on the right temple. This was caused by the jostling he got when we were running and stumbling toward our destination. The baby apparently lay in one position and its head rubbed against the basket for quite some time."

"Have you ever heard of the American Medical Association; do you know anything about the organization?" Dr. Laszlo was asked.

"Of course," he said, adding: "We were well acquainted with your publications while we were at the University, but the name meant much more to us when we reached a refugee physician processing center in Vienna. It was there that we received 500 shillings ($20) apiece and we will be forever grateful. They told us the money represented contributions from several medical organizations and they mentioned the American Medical Association."

"Hungarian medicine today is—to use an American expression—in a mess. The urological staff at the university hospital consisted of 20 physicians. On the day we left there were only three and one of them was an old physician who was ill, leaving only two.

"The revolution," he continued, "was started by students. Since we were on the teaching staff, the Russian masters hold all teachers responsible. Even before we left, a general housecleaning of the teaching staff was started. Teachers are being substituted by party followers who can be trusted with indoctrinating the youth in Russian ideologies and practices.

"Neither my wife nor I were members of the party. That is why we were never able to get on the clinical staff of the university. Our jobs carried a great deal of prestige, but little salary."

Dr. Laszlo said that the medical university curriculum is being filled, more and more, with military subjects, socialist theory, and the Russian language.

"A great amount of time is being spent on nonprofessional studies," he said.

Dr. Laszlo and his wife have no immediate plans for the future except that both want to study and speak English as soon as possible. They both know that it is a basic requirement for licensure.

(Continued on Page 70)

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Flight of Hungarian Refugees

(Continued from Page 66)

"We realize we have many problems in a new and strange land," he said with a wave of his hand. "Our most immediate is to find a way of earning a livelihood until that day when we can carry a little black bag and care for our own patients. Freedom to work and study and pray is what we dreamed about and now that we are in America little else matters."

—A.M.A. Secretary's Letter

* * *

Note: Laszlo and Elizabeth are now serving as interns at the Swedish Covenant Hospital in Chicago.

Ways of Reducing Sports Injuries Suggested

The chief surgeon of Harvard University's athletic department said recently that many sports injuries could be prevented by better medical supervision of athletic practice and events.

In addition, Dr. Augustus Thorndike recommended that a preventive program be developed by sports organizations and that a method of recording injuries on a national scale be devised, preferably through the National Collegiate Athletic Association.

He believes that the true incidence of sports injuries is too high. Only a few scattered figures are available and those are of deaths. Among them are:

(Continued on Page 74)

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Ways of Reducing Sports Injuries Suggested

(Continued from Page 70)

During the 1955 football season there were 10 recorded deaths during play, including one death in the relatively harmless "touch" football. During the 32 years preceding 1951, the New York City medical examiner's office recorded 43 deaths in baseball; 22 in football; 21 in boxing, and seven in basketball. One major life insurance company recorded three fatalities in golf in a two-year period.

Writing in a recent issue of the *Journal of the American Medical Association,* Dr. Thorndike said the rate of sports injuries could be reduced through changes in athletic rules and regulations; through better enforcement of existing rules, and through better medical supervision, especially in high school and sandlot playground competition.

Topping his preventive program list was compulsory preseason physical examination of all competitors, followed by measures to prevent repeating old injuries.

He also said the team physician must be given a free hand—without pressure from coaches or trainers—to decide when a player should be kept out of a game to prevent aggravating an injury. The team

(Continued on Page 78)

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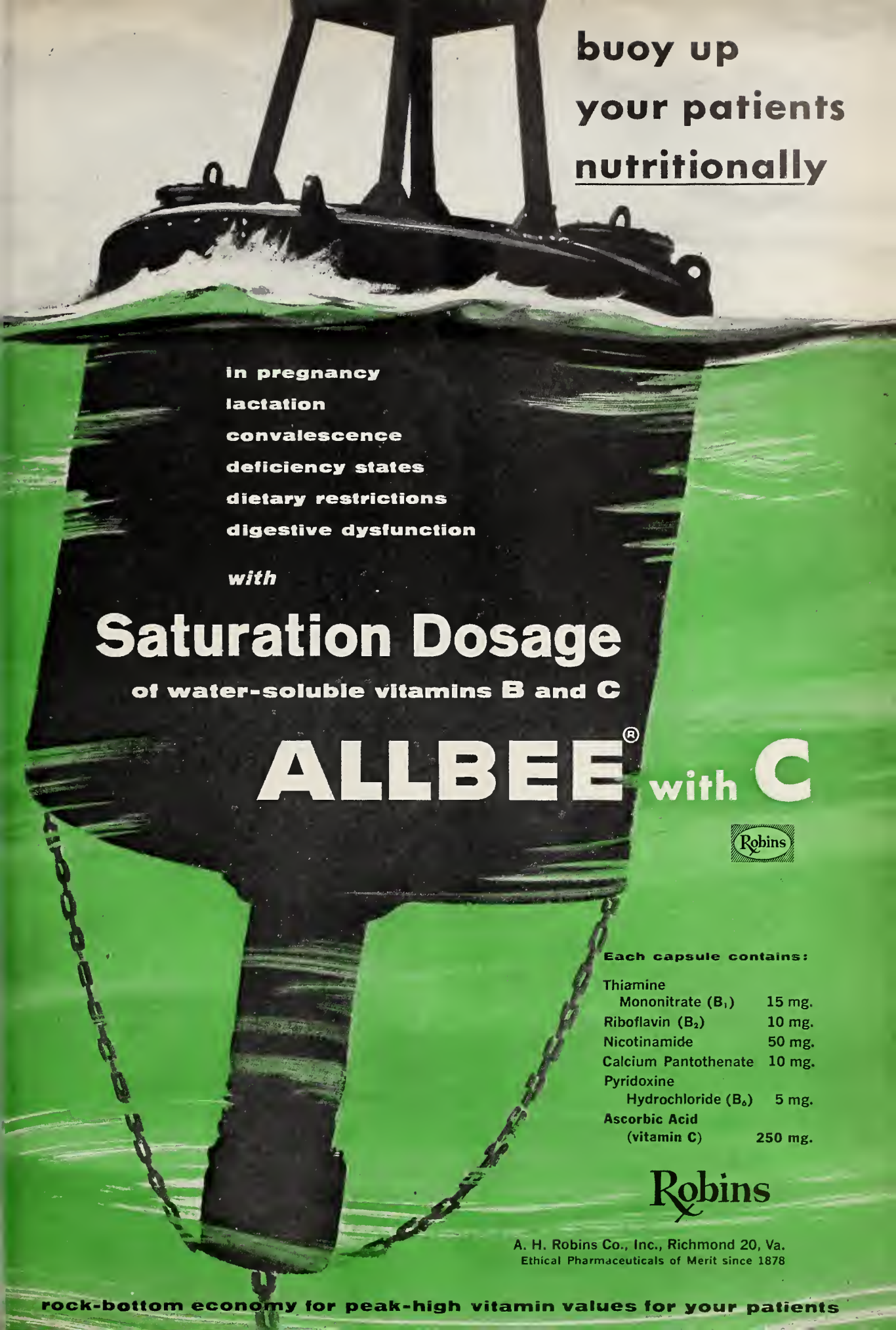
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Ways of Reducing Sports Injuries Suggested

(Continued from Page 74)

physician also should be allowed to serve as "observer," picking out the player who limps or shows some other warning of potential serious injury. The physician, he said, is definitely the person to do this, since coaches and trainers are too busy with technicalities of play to be able to handle this job.

However, coaches and trainers must do their part by teaching players how to prevent undue exposure of vulnerable parts of the body, and to guard against a difficult problem—overtraining.

Closer attention to rules by officials is needed to prevent injuries from many fouls or rule infractions which now go unnoticed, he said, adding: "Perhaps the fault lies in the rules, but perhaps it is the laxity in officiating."

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(Continued on Page 86)

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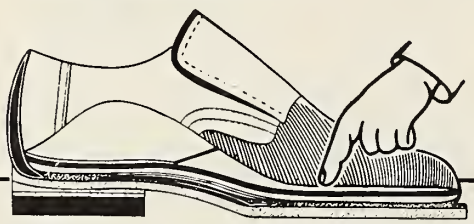

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*Schwartz, E.: New York J. Med. 56:570, 1956.

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Role of Physicians in the Destiny of the Nation

(Continued from Front Advertising Section Page 60)

but did not practice. . . . Two doctors who served in the Congress were later directors of the U. S. mint, Samuel Moore of Pennsylvania (1817-23) and Daniel Sturgeon of Pennsylvania (Senate 1840-51), and one was U. S. Treasurer, Thomas T. Tucker of South Carolina (1787-88). . . . Alexander Campbell (Senate 1809-13) was vice-president of the first Ohio anti-slavery society. . . . Thomas Dunn English of New Jersey (1891-95), trained as physician and lawyer, neglected both for writing. . . . Samuel Fowler of New Jersey (1833-37) is recognized as the discoverer of two minerals, fowlerite and franklinite. . . . John E. Hutton of Missouri (1885-89) practiced law and medicine at the same time. . . . After serving in the House, George B. Loring of Massachusetts (1877-81) was made U. S. Commissioner of Agriculture, then minister to Portugal. . . . William S. Haymond (1875-77) organized the Central Medical College of Indianapolis, after Civil War service. . . . Norton S. Townsend of Ohio (1851-53) became prominent in scientific agriculture. . . . William Darlington of Pennsylvania (1815-23) was internationally recognized as a botanist. . . . Robert B. Vance of North Carolina served one term (1823-25), was defeated three consecutive times when he tried again, the last time with a degree of finality: His successful opponent killed him in a duel.

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	Phosphorus ($CaHPO_4$) .....108 mg.	Boron ($Na_2B_4O_7$) .....0.1 mg.

Ways of Reducing Sports Injuries Suggested

(Continued from Page 78)

injured player may return to the team, is the major responsibility of the team doctor. He must become familiar with the common types of sports injuries; for instance, the sprains, strains, and contusions which cause over 60 per cent of competitive athletic injuries.

Dr. Thorndike pointed out that industry and insurance companies have made an organized effort to reduce industrial accidents, but little has been done by coaches, trainers and others in the field of sports to develop a safety training program for athletes.

"Whatever program is adopted to reduce sports injuries will require deep thought and cooperation from all sides of the field: The professional, the amateur, the schools and those responsible for sports in public and private playgrounds," he said.

Sculpture Tools Used for Skin Planing

Tools used by sculptors to rough clay are now being used by doctors to smooth away acne scars.

The tools are forged steel rasps having a central handle with variously shaped toothed working surfaces at each end. They are available at most sculpture supply houses. Another rasp, sold as a "corn and callus" instrument by notion stores, is also used.

Their use is the latest development in dermabrasion in which acne, chickenpox, smallpox and shingles scars can be removed, or at least improved, by abrading the scarred areas. Earlier techniques used sandpaper or revolving wire brushes.

Dr. Douglas Torre, a New York dermatologist, described the new technique and its use on 24 patients in a recent issue of *Archives of Dermatology*, an American Medical Association publication.

(Continued on Page 90)

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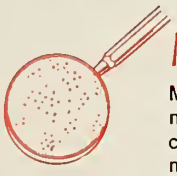

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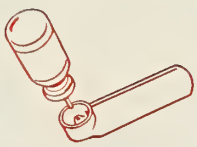

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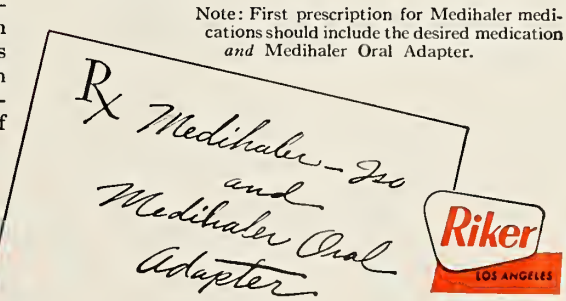

Sculpture Tools Used for Skin Planing

(Continued from Page 86)

While the new technique is slower and requires more work by the doctor than the wire-brush technique. it is simpler, cheaper and less subject to mishap, Dr. Torre said. It also has many advantages and none of the disadvantages of the sandpaper method.

In the new technique local anesthesia is injected into the area to be abraded. The rasps are used in a crisscross and circular motion. In the wirebrush method, the skin is "frozen" and then abraded with the motor-driven wire brush which is manipulated in short strokes. One advantage of the rasp method over the wirebrush technique is that the scarred area can be evaluated during the operation since the skin is not "frozen" by an anesthetic, he said.

The results in the 24 patients varied from an estimated 20 to 75 per cent improvement in appearance of the skin. One patient was treated by sandpaper, wire brush and rasp on different occasions with no "appreciable difference" in the end result.

On eight occasions the wire brush was used ini-

(Continued on Page 94)

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1. Frohman, I. P.; Pomeranze, J.; Rummel, W.; Kircher, R. F.; Clancy, J. B.; Dwyer, T. A.; Wagner, H.; O'Brien, T. E.; Curley, R. T.; Jörgensen, G.; Onorato, R. R.; Ira, F.; Lee, Jr., J. G.; Gorla, W. O.; White, R. N.; Gadek, R. J.; Remy, D.: Scientific Exhibit, 6th International Congress of Hematology, Boston, Mass., August, 1956.
2. Wagner, H.: Landarzt *31*:496, 1955.
3. Jörgensen, G.: Arztl. Wehnschr. *10*:82, 1955.

*Pat. Pending. †α-aminoacetic-ferrous sulfate complex, exsiccated

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Sculpture Tools Used for Skin Planing

(Continued from Page 90)

tially and the rasp was used later to even out the abraded area and shade off the edges. In fact, Dr. Torre said he usually uses both the rasp and wire brush. preferring the wire-brush technique when large areas are to be done, and the rasp for smaller areas and for "finishing off" after using the wire brush.

Dr. Torre is on the staff of the New York Hospital and Cornell University Medical Center.

More General Practitioners Can Now Treat Alcoholism

It is now possible for more and more general practitioners to provide the first necessity in treatment of the chronic alcoholic—which is simply to make him feel better through medical care.

Dr. Marvin L. Block. Buffalo, N. Y., chairman of the American Medical Association's committee on alcoholism, said recently that patience and understanding, psychotherapy, and sometimes the help of

(Continued on Page 102)

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ANALYTICAL PATHOLOGY—Treatises in the Perspective of Biology, Chemistry and Physics—Edited by Robert C. Mellors, M.D., Ph.D., Associate, Pathology Division, Sloan-Kettering Institute for Cancer Research, Assistant Professor of Pathology, Cornell University Medical College. The Blakiston Division, McGraw-Hill Book Company, New York, 1957. 477 pages, $12.00.

CALIFORNIA SOCIAL WELFARE—Vaughn Davis Bornet, Ph.D.—A Research Study Commissioned by the Commonwealth Club of California. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1956. 520 pages, $5.00.

CHALLENGES TO CONTEMPORARY MEDICINE—Alan Gregg, Vice-President Emeritus of the Rockefeller Foundation. Columbia University Press, New York, 1956. 120 pages, $3.00.

CHILDREN'S EYE PROBLEMS—Emanuel Krimsky, M.D., Attending Staff in Ophthalmology, St. John's Hospital, Long Island City. Grune & Stratton, Inc., New York, 1956. 175 pages, $6.00.

DISEASES OF THE HEART AND CIRCULATION—Second, Revised and Enlarged Edition—Paul Wood, O.B.E., M.D. (Melbourne), F.R.C.P. (London), Director, Institute of Cardiology, London. J. B. Lippincott Company, Philadelphia, 1956. 1005 pages, $15.00.

HEART SOUNDS, CARDIAC PULSATIONS, AND CORONARY DISEASE—William Dock, M.D., Professor of Medicine, State University of New York, College of Medicine. University of Kansas Press, Lawrence, 1956. 98 pages, $2.50.

HOW TO ENJOY GOOD HEALTH—Edited by Cyril Solomon, M.D., and Brooks Roberts, M.D. Random House, 457 Madison Ave., New York 22, N. Y., 1956. 240 pages, $3.95.

INDUSTRIAL DEAFNESS—Hearing Testing and Noise Treatment—Joseph Sataloff, M.D., D.Sc. (Med.), Assistant Professor of Otology, Jefferson Medical College, Philadelphia. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1957. 333 pages, $8.00.

LOW-FAT COOKERY—Evelyn S. Stead and Gloria K. Warren, Dietitian, with an Introduction by Eugene A. Stead, Jr., M.D., and James V. Warren, M.D. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 184 pages, $3.95.

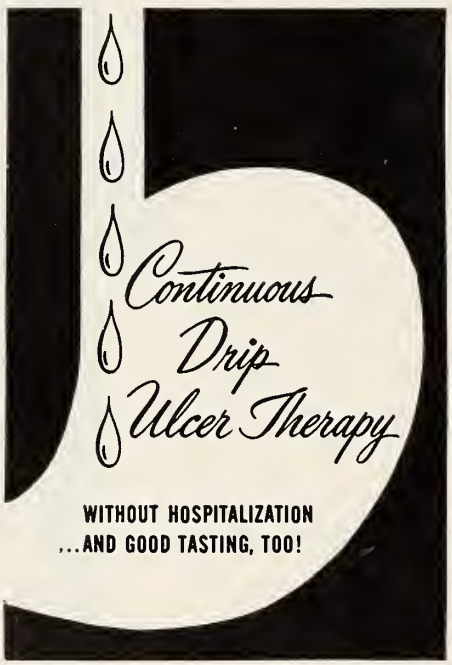
PATIENT SPEAKS, THE—Harold A. Abramson, M.D., Associate Attending Physician and Chief of the Allergy Clinic, The Mount Sinai Hospital, New York City. Vantage Press, 120 West 31st Street, New York 1, N. Y., 1956. 239 pages, $3.50.

PRACTITIONERS' CONFERENCES—Held at The New York Hospital-Cornell Medical Center—Volume 5—Edited by Claude E. Forkner, M.D., F.A.C.P., Professor of Clinical Medicine, Cornell University Medical College. Appleton-Century-Crofts, Inc., New York, 1956. 396 pages, $6.75.

PROBLEMS OF AGING—28th Annual Graduate Fortnight, The New York Academy of Medicine—Edited by Robert L. Craig, M.D. Distributed by George Eliot, Medical and Scientific Books, 1302 Second Avenue, New York 21, N. Y., 1956. 240 pages, $3.50.

VISUAL FIELDS, THE—A Textbook and Atlas of Clinical Perimetry—David O. Harrington, A.B., M.D., F.A.C.S., Clinical Professor of Ophthalmology, University of California School of Medicine. The C. V. Mosby Company, St. Louis, 1956. 327 pages, 234 illustrations, and nine color plates, $16.00.

YEAR BOOK OF OBSTETRICS AND GYNECOLOGY, THE—1956-1957—J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary), Professor of Gynecology, Cook County Graduate School of Medicine, Editor. The Year Book Publishers, Incorporated, 200 East Illinois St., Chicago, 1956. 592 pages, 82 illustrations, $6.75.



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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. *22*:67 (Mar.) 1955.

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More General Practitioners Can Now Treat Alcoholism

(Continued from Page 94)

specialists is needed for long-range treatment of the alcoholic.

However, the first steps are now within the reach of more doctors than ever before through improved medical techniques and new drugs, he said in a recent issue of the *Journal of the American Medical Association.*

The necessary psychotherapy can be administered by the average physician if he will take the time to understand and help the sick alcoholic. However, the medical treatment of alcoholism is rapidly becoming more important in accomplishing recovery, he said. Because of the fear and threat that so many alcoholics feel about any treatment, a medical approach seems much more acceptable. As the patient's physical condition improves, he feels better and is more willing to cooperate and accept psychiatric treatment.

"In the chronic alcoholic we are dealing not only with a sick individual but with that individual in relationship to his environment," Dr. Block said. Therefore, his social situation, religious background, employment or industrial situation, and his relation-

(Continued on Page 112)

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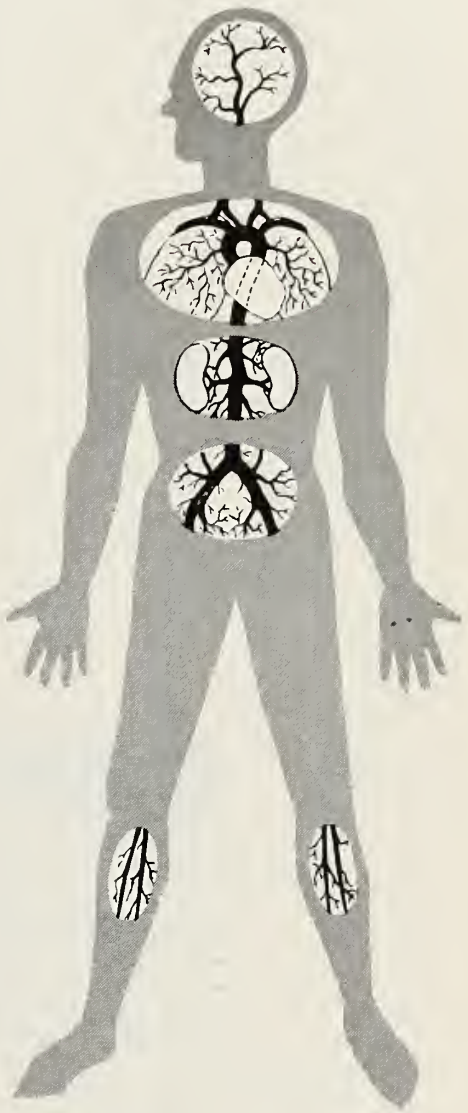

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More General Practitioners Can Now Treat Alcoholism

(Continued from Page 102)

ships with family, friends and fellow employees are pertinent factors.

While it is not always necessary to treat the patient in a hospital, "there is no doubt that this is the best setting for such treatment," he said. Necessary equipment is readily available. In addition, it is frequently advantageous to get the patient away from his family, since "all too frequently the family is in an unfavorable emotional state during the patient's intoxication."

General hospitals should be willing to accept alcoholic patients, he said. Records have shown that alcoholic patients offer no more difficulty for hospitals than any other sick persons. In fact, the hospital's attitude that the acutely ill alcoholic patient is sick and is welcome for treatment makes these patients more cooperative than many others, he said.

Dr. Block then discussed at length the specific medical treatment of alcoholism. He said his discussion was arranged to fit within the framework of the practicing physician's experience and knowledge. His report is the first of a series on the treatment and the physiological, psychiatric and sociological aspects of alcoholism, according to Dr. Richard J. Plunkett, secretary of the A.M.A.'s council on mental health.

Dr. Plunkett said the council and the members of its committee on alcoholism believe that much of the recently developed information on the most effective methods of treating alcoholism in private practice and in the hospital has not had wide circulation. As a result many patients are not receiving the necessary attention and treatment that could and should be given them.

"In view of American medicine's recognition of alcoholism as a disease and not as a problem of morals . . . the council and its committee believe that an intensive effort is now necessary to provide these patients with the proper medical care and consideration . . . ," he said.

Four Cases of Leukemia In One Family

The chances of leukemia, a serious blood disease, occurring in more than one member of a family are exceedingly small, but when it does occur, it may result from some hereditary factor, two North Dakota physicians said recently.

Drs. Marlin J. E. Johnson and Clifford H. Peters, Bismarck, N. D., observed the development of three cases of acute leukemia and one of lymphosarcoma among four of 12 children in a North Dakota farm family during 1952-54.

(Continued on Page 116)

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PROGRAM

Thursday Morning, March 7

INTERNAL MEDICINE

9:00-10:45—Lectures, Golden Bough Theater—
The Differential Diagnosis of Jaundice. Thomas H. Brem, M.D.
Electrolyte Problems. Telfer B. Reynolds, M.D.
Treatment of Diabetes. Helen E. Martin, M.D.
Nephrosis and Nephritis. Ralph E. Homann, Jr., M.D.

11:00-12:00—Three Concurrent Panel Discussions—La Playa Hotel (Three faculty members each; you may go to one of your choice.
Acute Pancreatitis.
Recent Advances in Treatment in Internal Medicine.
Cardiac Patient in Pregnancy.

12:15-1:45—Lunch.
The Role of the California Medical Association in Postgraduate Medical Education. Edward C. Rosenow, Jr., M.D.

Thursday Afternoon, March 7

OBSTETRICS AND GYNECOLOGY

2:00-3:40—Lectures, Golden Bough Theater—
Office Gynecology. George A. Macer, M.D.
Pelvic Pain. Charles F. Langmade, M.D.
Dystocia. Bernard J. Hanley, M.D.
Obstetrical Anesthesia. Judson S. Denson, M.D.

4:00-5:00—Three Concurrent Panel Discussions, La Playa Hotel. (Three faculty members each; you may go to one of your choice.)
Low Back Pain.
Acute Abdomen in Pregnancy.
The Diabetic in Pregnancy.

8:00—Joint Dinner Meeting with Monterey County Medical Society at La Playa Hotel. Wives are invited to attend.
Cardiology of Yesterday, Today and Tomorrow. George C. Griffith, M.D.

Friday Morning, March 8

SURGERY

9:00-10:45—Lectures, Golden Bough Theater—
Vascular Surgery. Herbert J. Movius, II, M.D.
Diagnosis of Acute Abdomen. E. M. Greaney, M.D.
Treatment of Burns. Irving A. Meeker, Jr., M.D.
Management of Upper G.I. Bleeding. E. M. Greaney, M.D.

11:00-12:00—Three Concurrent Panel Discussions, La Playa Hotel. (Three faculty members each; you may go to one of your choice.)
Diagnosis of the Acute Abdomen in Childhood.
Electrolyte Problems in Surgical Patients.
Immediate Management of Traumatic Conditions.

12:15-1:45—Lunch.
Goals in Postgraduate Medical Education. Phil R. Manning, M.D.

Friday Afternoon, March 8

2:00-3:45—Lectures, Golden Bough Theater—
Orthopedic Problems in General Practice. Lorin L. Stephens, M.D.
Newborn Emergencies. Merl J. Carson, M.D.
Anesthesia in Pediatrics. Judson S. Denson, M.D.

4:00-5:00—Three Concurrent Panel Discussions, La Playa Hotel—
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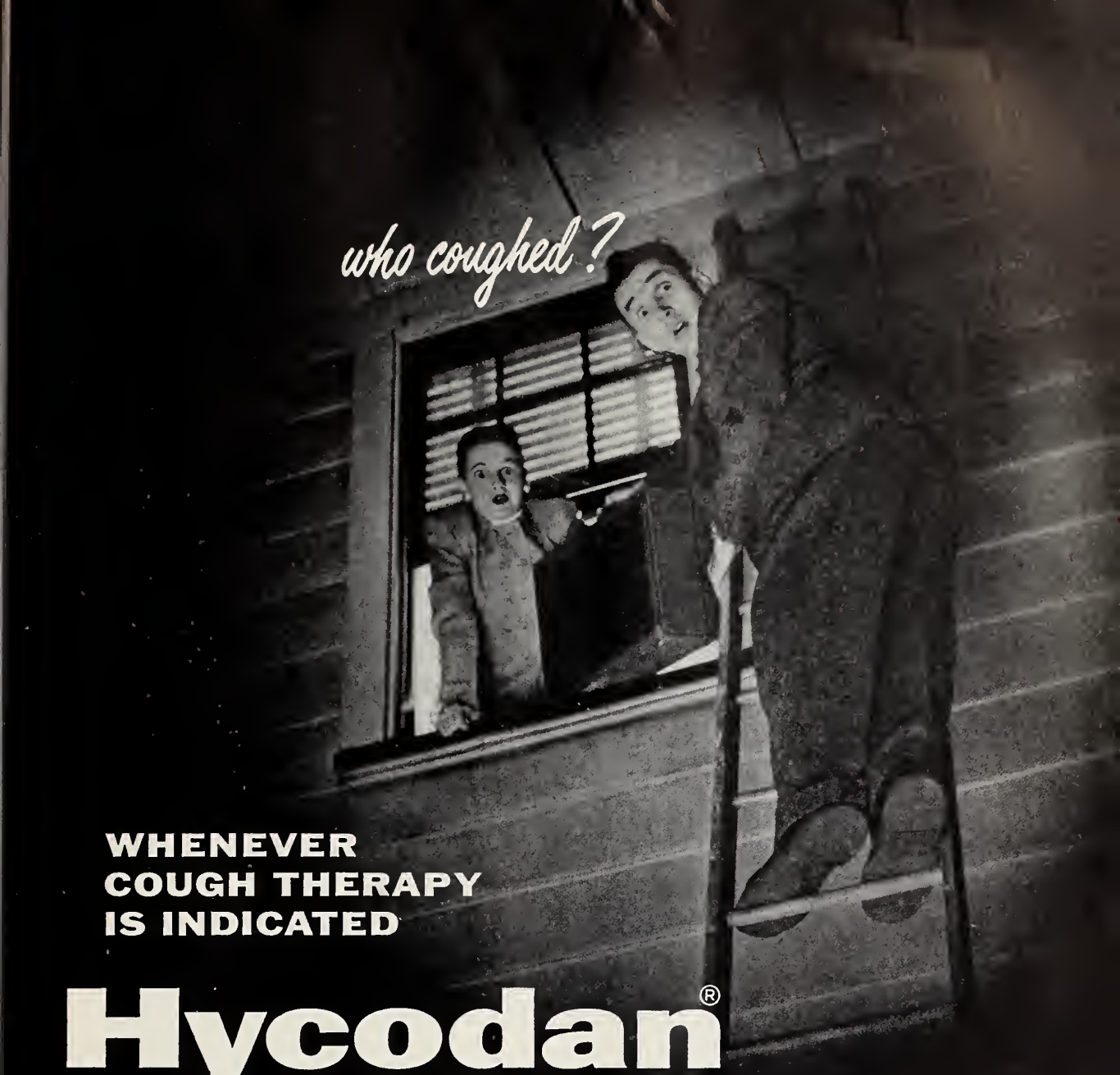

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Four Cases of Leukemia In One Family

(Continued from Page 112)

Only two other families in which more than two children had leukemia or lymphomas have been reported. Five of eight children in one family had acute leukemia, while four of seven children in the other family had either leukemia or lymphomas, the doctors said in a recent issue of the *Journal of the American Medical Association*. A worldwide survey in 1953 revealed only 12 other families in which two children had acute leukemia.

Three brothers, aged 24, 26 and 29, and one sister, aged 33, were all fatally affected.

The chances of four cases occurring in a family of 12 children are about five in one billion, the authors said. They did not believe that chance played a part in these cases. Neither did environmental factors. Rather they believed that heredity played a major role in these cases, especially when they learned that the parents of the children were first cousins. Their grandmothers were sisters and their grandfathers were believed to have been fourth cousins.

(Continued on Page 118)

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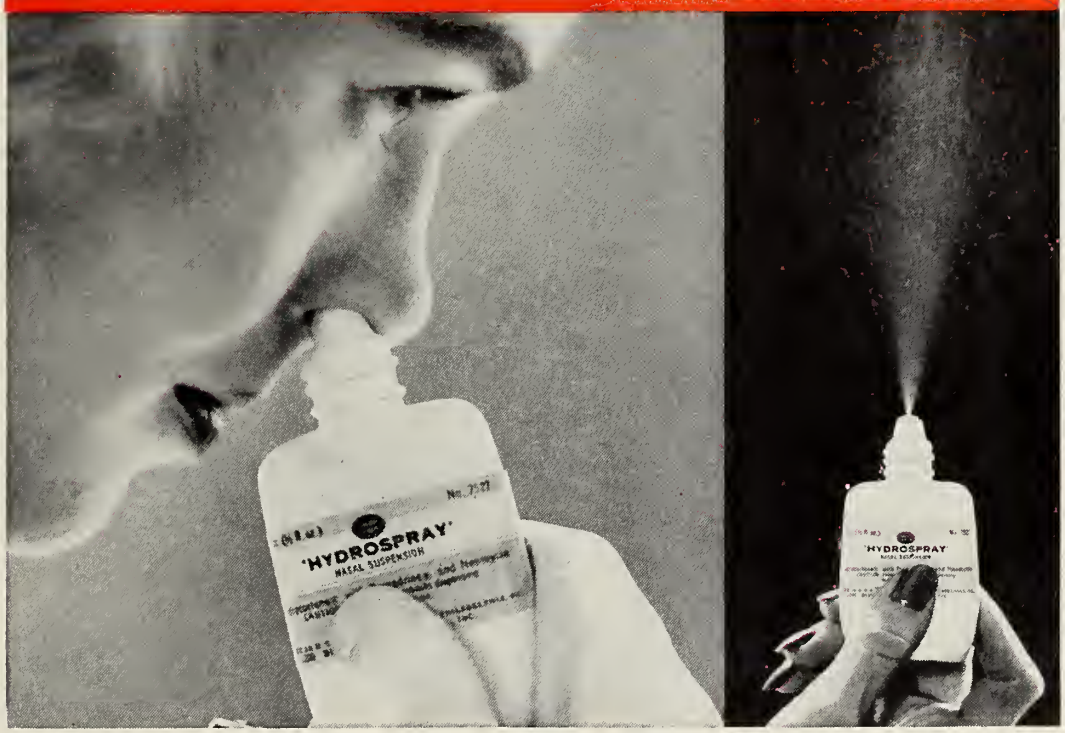

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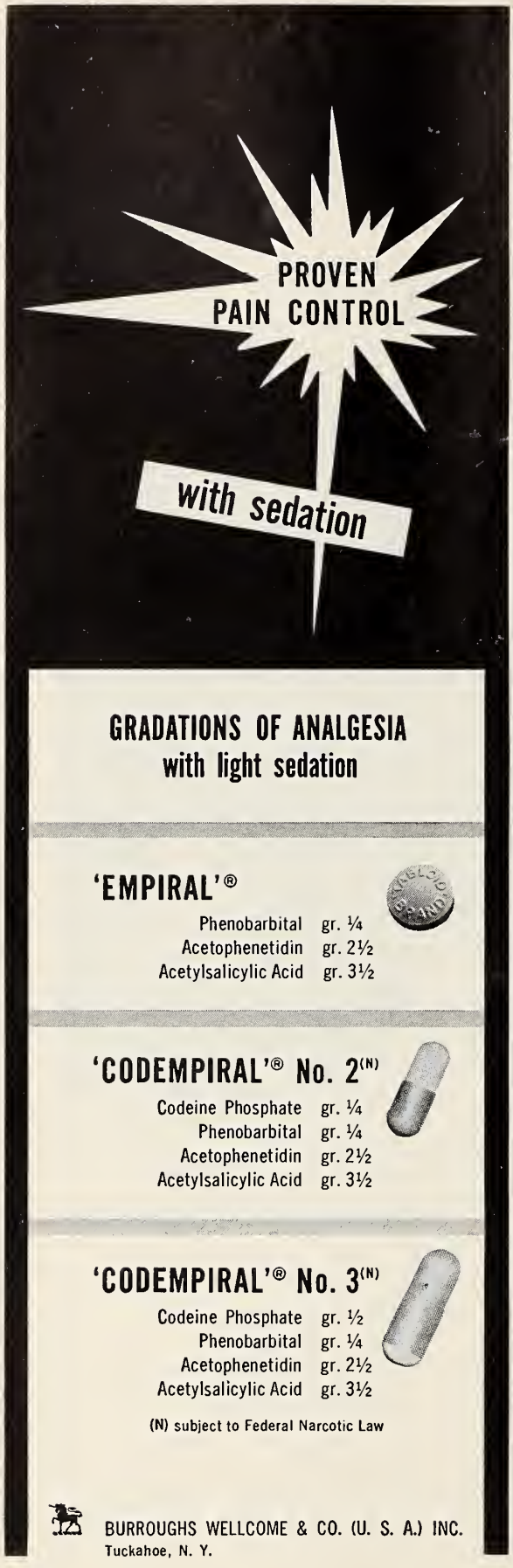

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Four Cases of Leukemia In One Family

(Continued from Page 116)

The doctors noted that one of the other two families with more than three affected children was also the result of a marriage between relatives. And it is "a well-known genetic fact" that the frequency of rare diseases due to inherited characteristics is greater among children resulting from marriages between relatives than among the general population.

The uniform age of onset and the similar, rapidly progressive nature of the disease in the four patients also suggested a hereditary factor, they said. Twenty-nine of the patients' first cousins lived in the same area and none of these cousins suffered any sort of malignancy. However, none of these cousins was the offspring of consanguineous marriage.

The failure to find any environmental agents as the cause of the disease does not mean that they do not exist, the authors said. However, "if they do exist, we are still confronted with the necessity for explaining why some of the children contracted leukemia, while others did not."

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Stem Pessaries Are Dangerous

The Food and Drug Administration has stated that stem pessaries are dangerous and should be removed from the market at once. In a formal policy statement published in a recent Federal Register. FDA concluded that "stem-type and wing-type intracervical and intrauterine pessaries are dangerous to health, and regardless of their labeling, may be shown to be misbranded." Distributors were advised by FDA to remove such articles from the interstate market at once, with a strong hint that otherwise court proceedings would be instituted.

FDA emphasized, however, that its action does not apply to other types of pessaries which are safely used following surgery and for supportive purposes.

The policy statement declares that it is now the consensus of medical opinion among experts qualified by scientific training and experience to evaluate the safety of such devices that stem-type and wing-type intracervical and intrauterine pessaries are dangerous for use under any form of labeling and serve no useful purpose.

Dr. Albert H. Holland, Jr., Medical Director of the Food and Drug Administration, said that such devices have been used as contraceptives for many years but are not reliable for preventing pregnancy. He said the pessaries have been labeled for use only under medical supervision since 1941 and that the decision to institute legal action against them was reached as a result of a recent medical survey in which 92 per cent of the experts consulted regarded these devices as dangerous for use under any conditions. These opinions were supported by many known cases of injuries, infections, cancer, and pregnancy associated with the use of such pessaries.

U. S. Department of Health, Education, and Welfare, Food and Drug Administration, Washington, D. C.

Use of Music as Medical Tool Increasing

Music, "the ancient tranquilizer," is coming of age as a medical tool, according to a special report and an editorial in a recent issue of the *Journal of the American Medical Association.*

Thousands of years ago music was used as part of magic healing rites. It was even used in mental hospitals in this country as early as 1792, but it was not until World War II that it became widely accepted as a medical aid, largely because of its use in Army hospitals, the unsigned report said.

Now it is used not as a cure but as an adjunct to other treatments in mental hospitals, as a way of helping paralyzed persons regain the use of their muscles, as a means of helping bedridden patients escape boredom and as "the chief sedative" during surgery.

Some examples of the use of music were outlined in the article. Bedridden tuberculosis patients at a Dutch institution lie flat on their backs as they present harmonica concerts. At the Denver, Colo., Children's Hospital, children whose arms are variously incapacitated can play the piano by using one finger, their elbows, their fists or their knuckles. Patients at Westwood Lodge, a private sanatorium near Boston, recently gave a concert with English handbells. The article described the concert this way:

"It was no routine affair for the musicians, ranging in age from 18 to 79 years. One was an alcoholic; others were suffering from deep depression, psychoneuroses, and schizophrenia. . . . What made the occasion special was that some of the patients, somehow, were responding to the tuned bells when other musical instruments and treatment had failed to crack the shells enclosing their personalities. The sanatorium's medical director, Dr. Martha Brunner-Orne, beamed with delight as 'Jingle Bells' and 'Silent Night' chimed through the halls and into her office. She said: 'It's just wonderful. This is the first time since we started bell ringing that the Christmas party has been devoted to that kind of music.' "

Even though music is shown to be of great help in medicine, physicians generally have not been able to accept it as "therapeutic in the true sense of the word," the article said. It quoted Dr. Jules H. Masserman, professor of nervous and mental diseases at Northwestern University, Chicago, as saying, "Music is only one of many avenues of approach to the patient when words alone, as is often the case, are inadequate."

Dr. Emilian A. Gutheil, a New York psychiatrist, was quoted as seeing great promise in music therapy. But he said no institution is yet willing to undertake the necessarily tedious step-by-step research necessary before "music prescriptions" can be written.

The editorial pointed out that properly selected music helps release tensions and allay fears. It has been found that when it is used in the dentist's office or in the hospital operating room, music reduces the amount of anesthesia required.

In hospitals, those needing music therapy are given every encouragement, and care is taken to emphasize the pleasurable aspects and minimize the drudgery, the editorial said. This may result in early performances that are "musically pathetic, or even painful, but therapeutically helpful and subject to great improvement if the therapist is endowed with patience and a true desire to help the sick or handicapped."

Trained music therapists are being sought on an ever-increasing scale. The field has already attracted many volunteer workers, but others could do much to increase participation in music therapy programs, the editorial concluded.

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Tests Show Chewing Tobacco's Effect on Body

Heart researchers have provided some new information for doctors wishing to advise their patients about the effects of chewing tobacco on the circulatory system.

Although 81 million pounds of chewing tobacco are consumed annually in the United States, practically nothing is known about its effect on the body. However, four Cincinnati researchers now have conducted a series of tests on men who habitually chewed tobacco. They reported their findings in a recent issue of the *Journal of the American Medical Association.*

They found that chewing tobacco produced changes in the body similar to those caused by smoking cigarettes, including increase in pulse rate and blood pressure and a decrease in skin temperature. It also produced changes in the ballistocardiograph, which measures the impact on the body of the heart's thrust as it pumps blood. Smoking did not produce ballistocardiograph changes.

The 24 men, ranging in age from 34 to 71 years, chewed low-nicotine tobacco or a regular commercial brand. Some also chewed gum for comparison.

After chewing commercial tobacco, the pulse rates of 14 men increased markedly, with an average in-

(Continued on Page 18)

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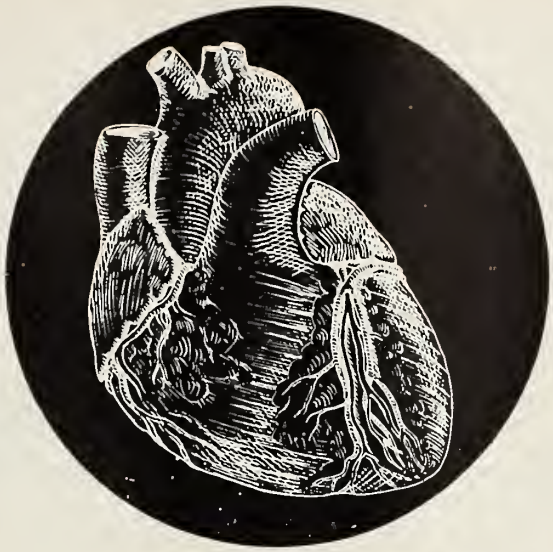

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Tests Show Chewing Tobacco's Effect on Body

(Continued from Page 14)

crease of 13.4 beats a minute. With low-nicotine tobacco, the rate remained constant in three men, decreased in one and increased by an average of 6.5 beats a minute in nine men. After chewing gum one man showed a slight rise and one a slight fall.

All showed definite increases in blood pressure after chewing commercial tobacco.

In most of the men the pattern of skin temperature changes was similar to that reported in cigarette smoking studies. Forehead temperatures remained nearly constant with both types of tobacco and gum, but temperatures in the fingers and toes decreased after chewing tobacco.

The ballistocardiograph changes, which were recorded in 23 men, were the greatest about 15 minutes after chewing began. Younger men who smoked in other studies did not show such changes.

The possibility that more nicotine is absorbed by the body during chewing than during smoking might explain these changes in the older men, the authors said.

(Continued on Page 26)

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Anti-Pyrexol Benzocaine Acutely anesthetic. Contains Benzocaine 3%. 1, 5 and 10 lb. tins.

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Closed-Circuit Television Treats Mental Patients

Closed-circuit television may be one answer to the staff shortage faced by many mental hospitals, a group of California researchers said recently.

Many new techniques of psychotherapy have been developed, but they frequently cannot be used because of lack of trained personnel and time. Closed-circuit television offers a method of delivering these treatments to a large number of patients at one time, while still giving the impression of personal contact, the researchers said in a recent issue of the *Archives of Neurology and Psychiatry*, published by the American Medical Association.

Closed-circuit television is so named because the program signal is carried directly from one point to another by cable, as opposed to commercial television, which is broadcast indiscriminately. Thus, closed-circuit television reception is restricted and can be seen only by those for whom it is intended.

Its use in medicine is not new. Since 1948 it has been used to show medical and surgical procedures to physicians attending American Medical Association meetings. It has also been used to present similar programs to doctors gathered at the same time in different cities.

The researchers reported the experimental use of closed-circuit television for treating patients at Agnews State Hospital, Agnew, California. The project was conducted under the auspices of the department of psychology, San Jose State College, San Jose, California.

The idea of using television as a treatment method sprang from the observation that patients' behavior improved after commercial television sets were placed on the wards. The patients—many of them withdrawn, fearful and hopeless—appeared to identify themselves with and respond to the performers on television. Many patients had developed the idea that no one cared about them, since the doctors and psychiatric technicians were too busy to devote much time to each individual. In addition, they were afraid of attention, preferring to remain unnoticed in the group.

Television appeared to offer a means of reaching the patient, giving the impression of personal attention, and still allowing the patient to remain in a group.

Starting in August, 1954, two groups of women were observed for behavior patterns. Three months later 75 of them began a program of watching and participating in closed-circuit television programs. The other group saw only commercial television. In March, 1955, the behavior and condition of the two groups were evaluated on the basis of psychological tests and staff observations. The women who had been treated by television showed "significant" improvement in behavior, were quieter and were more easily managed, the authors said.

(Continued on Page 30)

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Sustained

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BEFORE: Female, 61 years. Severe itch in anorectal and vulval areas for 7 years. Area about rectum and vulva reddened and fissured, sensitive, painful. Itching continuous. Moderate erythema.

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*Bodkin, L.G., and Ferguson, E.A., Jr.: Successful Ointment Therapy for Pruritus Ani, Am. J. Digest. Dis. 18.59 (Feb.) 1951.

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Supplied:

Bottles of 16 and 100 capsules.

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Upjohn

Tests Show Chewing Tobacco's Effect on Body

(Continued from Page 18)

The average amount of tobacco chewed contained about 10 times more tobacco than the standard cigarette. In addition, the tobacco was held in the mouth longer than cigarette smoke usually is. It is estimated that more than two-thirds of the nicotine in cigarette smoke is absorbed through the membranes of the mouth.

Conducting the research, which was supported by a grant from the Tobacco Industry Research Committee, New York, were Dr. David L. Simon, Dr. Arnold Iglauer, Dr. John Braunstein and Robert E. Rakel of Cincinnati General Hospital and Kettering Laboratory, University of Cincinnati.

C. M. A. Annual Session

Los Angeles

April 28 - May 1, 1957

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1. Frohman, I. P.; Pomeranze, J.; Rummel, W.; Kircher, R. F.; Clancy, J. B.; Dwyer, T. A.; Wagner, H.; O'Brien, T. E.; Curley, R. T.; Jörgensen, G.; Onorato, R. R.; Ira, F.; Lee, Jr., J. G.; Gorla, W. O.; White, R. N.; Gadek, R. J.; Remy, D.: Scientific Exhibit, 6th International Congress of Hematology, Boston, Mass., August, 1956.
2. Wagner, H.: Landarzt *31*:496, 1955.
3. Jörgensen, G.: Arztl. Wchnschr. *10*:82, 1955.

†α-aminoacetic-ferrous sulfate complex, exsiccated

NORDMARK PHARMACEUTICAL LABORATORIES, INC., IRVINGTON, N. J.

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Closed-Circuit Television Treats Mental Patients

(Continued from Page 23)

Two types of televised therapy programs were used continuously during the study: (1) Panel and group sessions in which patients met and discussed their problems, and (2) selected motion pictures. Other television programs included music and art films followed by art classes, individual therapy sessions, group question and answer periods, and "psychodramas" in which patients acted out their conflicts and problems.

Patients' responses to the films were expressed in several ways, the authors said. After a film on grooming and posture, the patients started wearing clean dresses, getting permanent waves and manicuring their nails. After films on dressmaking, some patients planned to make their own dresses.

One patient after seeing one of the mental health films commented, "These films certainly have a lesson in them. . . . Films for entertainment are all right, but it's the first time anyone ever thought we had enough sense to understand or learn anything."

(Continued on Page 38)

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(For reservation forms, please turn to page 96, Advertising Section)

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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. 22:67 (Mar.) 1955.

†Mg trisilicate 3.5 gr.; Ca carbonate 2.0 gr.; Mg oxide 2.0 gr.; Mg carbonate 0.5 gr.

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Since daily dosage is an important part of supplementation, GEVRAL is now packaged in a special JUBILEE JAR—an attractive container of 100 capsules for the family dining table. Specify GEVRAL. Your patients will remember to take their "vitamins" regularly when they have the JUBILEE JAR before them at mealtime.

GEVRAL is aptly formulated to meet the broad vitamin-mineral requirements of daily life. Balanced, comprehensive, GEVRAL provides 14 vitamins, 11 minerals and Purified Intrinsic Factor Concentrate. Dosage is only one *dry-filled* capsule daily.

Each GEVRAL *capsule contains:*

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Vitamin D	500 U.S.P. Units
Vitamin B_{12}	1 mcgm.
Thiamine Mononitrate (B_1)	5 mg.
Riboflavin (B_2)	5 mg.
Niacinamide	15 mg.
Folic Acid	1 mg.
Pyridoxine HCl (B_6)	0.5 mg.
Ca Pantothenate	5 mg.
Choline Bitartrate	50 mg.
Inositol	50 mg.
Ascorbic Acid (C)	50 mg.
Vitamin E (as tocopheryl acetates)	10 I. U.
l-Lysine Monohydrochloride	25 mg.
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Vaccine for Respiratory Diseases Tested

An editorial in a recent issue of the *Journal of the American Medical Association* said progress already made in the study of virus-caused respiratory diseases indicates that many more problems will be solved "in the foreseeable future."

Two articles in the same *Journal* reported success in developing a new vaccine to combat nonfeverish, grippe-like illnesses especially prevalent among military personnel.

The editorial explained that viruses causing these illnesses, which do not include the common cold, have been variously named AD for "adenoid degeneration" or APC for "adenoidal-pharyngeal-conjunctival" in the past but are now generally labeled adenoviruses.

At least 14 types of adenoviruses have been identified so far. Types 1, 2 and 5 are frequently associated with feverish respiratory infections in young children. Type 3 causes a new disease called pharyngoconjunctival fever, which is seen most frequently in children. Types 4 and 7 cause much of the acute respiratory disease and primary atypical pneumonia seen among adults, and types 6 and 10 cause conjunctivitis.

The editorial pointed out that the development of simpler laboratory methods has made it easier to identify previously unrecognized viruses, but early hopes that all respiratory diseases of unknown origin could be attributed to the newly recognized viruses have not materialized.

The vaccine described in the two articles was made to combat infections caused by types 4 and 7 adenoviruses. Viruses obtained from patients' throat washings were grown in monkey kidney tissue and then killed by incubating them in the chemical formalin.

The process was described by Maurice R. Hilleman, Ph.D., Mildred S. Warfield, B.S., Salley Anderson, B.S., and Jacqueline H. Werner, M.S., from the department of respiratory diseases, Walter Reed Army Institute of Research, Washington, D. C.

The testing of the vaccine among 600 recruits at Ft. Dix, N. J., was outlined by Drs. Reuel A. Stallones and Ross L. Gauld, both from the Walter Reed Institute and Mr. Hilleman. Miss Warfield and Miss Anderson.

The vaccine, which caused no side effects among the persons receiving it, was found to be effective beginning one week after the initial injection, they said. It caused a marked reduction in the number of illnesses requiring hospitalization during the second through the fifth weeks after vaccination. And no disease was found among the vaccinated men after the fifth week. It also appeared to reduce the number of persons with mild attacks of illness which would normally not have required hospitalization.

(Continued on Page 42)

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Problem-eaters, the underweight, and generally below-par patients of all ages respond to INCREMIN.

INCREMIN offers l-Lysine for protein utilization, and essential vitamins noted for outstanding ability to stimulate appetite, overcome anorexia.

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l-Lysine	300 mg.	Pyridoxine (B_6)	5 mg.
Vitamin B_{12}	25 mcgm.	(INCREMIN Drops contain 1% alcohol)	
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LEDERLE LABORATORIES DIVISION
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Closed-Circuit Television Treats Mental Patients

(Continued from Page 30)

Patients who participated in the televised group discussions and those who watched them said that the programs helped them to work out some of their own emotional problems.

The authors concluded that closed-circuit television effectively serves two purposes in a mental hospital. It is a way of repeatedly presenting general information on the basic principles of general health and mental hygiene, and of giving psychotherapy to many persons at once while still giving the impression of individual treatment. They urged that further research be carried out to learn just what types of treatment are most effective when presented by television.

The authors were Dr. Hyman Tucker, superintendent of Agnews State Hospital; Richard B. Lewis, Ed. D., professor of education and coordinator of audio-visual services at San Jose State College, and Mrs. Gaither Lee Martin, R.N., M.A., and Charles H. R. Over, M.A., hospital staff members and postgraduate students in psychology at San Jose State College.

Please Note

REGISTRATION

Registration and information desks are located at the back of the Ballroom, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Sunday, Monday, Tuesday, from 9:00 a.m. to 5:00 p.m., and Wednesday, 9:00 a.m. to noon. *Admission to the general and section sessions and exhibit areas is by badge only.*

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1. Weil, L. L.: J. Florida Acad. Gen. Pract. 4:9 (July) 1954. 2. Williams, Henry L.: J. Michigan State Med. Society 51:572-576 (May) 1952.

Vaccine for Respiratory Diseases Tested

(Continued from Page 34)

Interestingly enough, antibody development against type 3 adenovirus was found to be as great as that against types 4 and 7, of which the vaccine was made.

The researchers concluded that the vaccine is safe and effective, that only one shot is necessary, and that the vaccine has great potential in military populations with their high rate of respiratory diseases. Evidence regarding the duration of protection was not obtained, and its value among civilian populations remains to be determined, they said.

Medical Students Return To Small Towns to Practice

A recent American Medical Association report says that medical students who were born and raised in small communities usually go back to small towns to practice after their graduation.

Also, the report says, graduates whose prior residence was in the smaller communities are less liable to limit their practice to a specialty.

The publicly-supported schools—state or municipal—draw a higher proportion of their students from smaller communities and consequently contribute comparatively more physicians to the smaller communities than do the private schools.

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5. No problems of cross-resistance have been encountered with CATHOCILLIN.

6. The normal intestinal flora is not disturbed by CATHOCILLIN.

DOSAGE: *for adults—two capsules q.i.d.; for children under 100 lbs.—dosage in proportion to weight (e.g. one capsule q.i.d. for a child weighing 50 lbs.).*

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—for these clinically important infections: tonsillitis; pharyngitis; pneumonia; otitis media; cervical lymphadenitis; streptococcal sore throat; infected tooth sockets; Vincent's infection; acne and superficial skin infections; impetigo; boils, furuncles and carbuncles; lung abscess; bronchitis; mastitis; osteomyelitis; wound infections; postoperative wound infections and infected lacerations; staphylococcal enteritis, staphylococcal diarrhea of the newborn; peritonitis (caused by susceptible organisms); pelvic inflammatory disease; gonorrhea; gonococcal arthritis; urethritis; scarlet fever; erysipelas.

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The Difficulties of Heart Arrest Treatment

Some people have wondered why the operating room is generally the only place where doctors attempt to open the chest and "hand-pump" a stopped heart back to life.

A description of a unique case in which this was done on an x-ray room floor showed some good reasons for doctors' reluctance to try it under anything but the most ideal circumstances.

Drs. C. David Brown, Joel Knudsen and George F. Schroeder of the Lutheran Deaconess hospital, Chicago, described the case in a recent issue of the *Journal of the American Medical Association.* It is one of the few known cases of successful resuscitation of a patient whose heart suddenly stopped while he was at work.

They reported the case in order to dispel the "atmosphere of fantasia" in reports of the case when it happened in 1954, and not as an example of the best method of resuscitation. This case, which was beset with difficulties, was successful "because of a happy combination of fortuitous circumstances and favorable coincidences" and a "vast amount of unselfish cooperative effort."

They said there was so much local publicity then that for a while physicians were considered negligent by families of patients who died from heart conditions if the chests were not opened for cardiac massage.

But this case shows just how difficult resuscitation is when cardiac arrest occurs outside of an operating room, where the necessary equipment and skilled personnel are immediately available.

On Dec. 17, 1954, a 24-year-old x-ray technician suddenly collapsed while developing an x-ray film in the Lutheran Deaconess hospital darkroom. A brief interval passed before the lights were turned on. The man showed all the signs of death. The roentgenologist ordered a heart stimulant as a "desperation measure" and ordered oxygen.

Dr. Knudsen, who was in the area, began artificial respiration. Dr. Brown happened to come by and administered the heart stimulant, but the only needle on hand apparently was too short and the stimulant probably did not reach the heart. They decided "nothing would be lost" by opening the chest. Less than four minutes—the absolute limit of time the heart can be stopped without brain damage from oxygen lack—had passed.

With a one-and-five-eighths-inch pocket knife blade the chest was opened with the patient still on the floor. After a minute of hand massage the heart began to twitch irregularly—an abnormal condition called fibrillation.

Dr. Schroeder chanced by at this time and began oxygen administration by mask, continuing it while the patient was carried through the darkroom maze to a cart and wheeled to an operating room. Then oxygen was given through a throat tube.

(Continued on Page 50)

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The Difficulties of Heart Arrest Treatment

(Continued from Page 46)

Fluids and drugs were given while six physicians took turns massaging the heart. Fibrillation had to be stopped, but the necessary electrical equipment was not available. A machine was brought from a neighboring hospital, but it short-circuited.

A noted specialist in this technique was called and asked to bring his machine, but because time was too short, he suggested instead that two drugs be administered. One was not immediately available so a substitution had to be made. Twice the drugs failed. After the third injection and further massage, the heart began to beat.

Two and a quarter hours had passed since the patient collapsed.

"Diligent nursing" and various treatments were given to prevent complications, and in 14 days the patient got up. On the 22nd day he went home. Two months after his collapse the man returned to work and has not missed a day since. He dances, skates, plays baseball, drives and has been on long plane flights without apparent reaction. At no time since his recovery has there been evidence of any mental or other abnormalities.

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The Clinical Psychologist

His Role in Private Medical Practice

NORMAN Q. BRILL, *M.D.*, Los Angeles

• The independent diagnosis and treatment of mental and nervous disorders according to California law constitutes practicing medicine. By this yardstick, an increasing number of clinical psychologists are entering the private practice of medicine. The medical profession has not provided through its leadership the opportunity for clinical psychologists to utilize their skills in a legitimate and supervised way in the treatment of private patients, nor has the medical profession taken sufficient interest in modern methods of treating patients with psychogenic disorders.

If the psychiatric team is a feasible and practical approach to spreading the base of psychiatric treatment in hospitals and clinics, it should be applicable to private practice settings too. In the team setting, the psychologist can render great assistance to the physician in the diagnosis and treatment of patients with psychogenic disorders without compromising the principle that the primary responsibility for the patient is the physician's. By virtue of his training and experience, it is the psychiatrist who is best qualified to supervise the work of the psychologist; and until such time as the medical profession is better acquainted with psychotherapeutic techniques, the employment of psychologist assistants should be (according to good medical practice) left to the psychiatrist.

The need for some regulation of the use of the title "psychologist" is increasing in order to protect the public from quacks who pose as psychologists. However, any law which is directed toward elimination of the quack should specifically define psychotherapy and contain provisions for its use under adequate medical supervision.

The medical profession is obligated to take its traditional role in providing the best possible treatment for patients who are in need of it, and psychotherapy is an inherent part of treatment.

IT IS LIKELY that most physicians are unaware of the increasing degree to which clinical psychologists are entering the private practice of medicine. The clinical psychologists here referred to are not the quacks, the diploma-mill or mail order house graduates, nor the faddist (about whom we are all concerned), but the graduates of legitimate university-sponsored programs of training who have received Ph.D. degrees in clinical psychology. And the term "practice of medicine" as here used means the independent undertaking of the treatment of a patient for a fee.

There are many different kinds of psychologists being trained by colleges and universities. There are in addition to clinical psychologists, counseling psychologists, experimental psychologists, educational psychologists, industrial psychologists, physiological psychologists, psychometricians and social

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psychologists. The nature and extent of their training differs greatly, varying from a bachelor's degree with a major in psychology to four or more years of postgraduate work including experience in research and leading to a doctor of philosophy degree. As can be inferred from their titles, they engage in a wide variety of activities in varied settings.

The clinical psychologist is a relative newcomer to the field of psychology. The increase in numbers of persons entering this field since World War II has been dramatic. Dr. James G. Miller (Symposium: The Veterans Administration and Clinical Psychology; Journal of Clinical Psychology, Vol. III, No. 1, 1-56, January, 1947) suggested it might be a "professional revolution." Dr. Miller played an important role in this "revolution." As Chief of the Clinical Psychology Section of the Neuropsychiatry Division of the Veterans Administration in 1946, he proposed that the Veterans Administration undertake, with the assistance of many universities, the training of clinical psychologists. A system was devised wherein these graduate students would work approximately one-half time in VA hospitals and clinics while taking their academic work under the universities. In this way they could be paid and receive support while getting their training.

Dr. Miller was convinced that "American universities [were] not . . . equipped to give graduate training in any type of psychology at a rate which [would] begin to meet the demand." He added, "There must be a complete revolution of the scope of national planning in this field, in matters both of quantity and of quality."

"Few, if any, would disagree," said Dr. Miller, "with the statement that no university in the country has in the past had a well-rounded training program covering all necessary fields of clinical psychology." He insisted that the clinical psychologist "is no longer merely a psychometric technician for he has developed full professional stature in diagnosis, in therapy, and in research. Consequently his status *is being established* [by the Veterans Administration] comparable to that of the physician in every way compatible with law and best professional practice." (This was an administrative decision, since at that time the new training program was just one year old.)

Dr. Daniel Blain, who was Chief of the Neuropsychiatry Division of Veterans Administration, made it very clear (quoting Dr. Miller) that the psychologist would have an important *team* function in the treatment of neuropsychiatric patients. This is of historical interest and reference to it will be made later in the discussion of the role of the clinical psychologist in the practice of medicine.

At the University of California at Los Angeles, as at other universities, it has become necessary to limit enrollment of graduate students in clinical psychology. Here the students are required to have a bachelor's degree and to have completed courses in psychological interviewing and case history methods, child psychology, psychology of exceptional children and abnormal psychology. Also required for admission are undergraduate courses in anthropology or sociology, chemistry, physics, mathematics, and one year of zoology, physiology, endocrinology or genetics. As graduate students the applicants must pass comprehensive examinations in eight of the following eleven areas of psychology: general, experimental, abnormal, social, comparative, physiological, developmental, historical, industrial, clinical and measurement.

During their first year of graduate work, one semester of three of the following four courses must be taken: Advanced Psychometric Methods, Clinical Psychology (basic concepts in clinical psychology), Advanced Clinical Measurement Techniques (study of tests used in clinical diagnosis—individual and group tests of intelligence, personality, diagnosis and projective techniques), Seminar in Abnormal Psychology.

In the second year practical experience is obtained in hospitals and clinics in clinical diagnostic testing and psychotherapy, and in some instances there is specialization in the area of speech disorders. In addition, at least one semester of three of the following five courses is required: Experimental Design in Psychology, Clinical Neurology, Personality Dynamics (theory of various schools of psychiatry), Theory and Practice of Projective Methods, Seminar in Mental Measurements.

In the third year, courses in Psychotherapeutic Techniques, Research in Psychology and Advanced Rorschach Interpretation are offered.

In the fourth year further work in research together with an internship is required, (*i.e.* working as a psychologist in a clinical setting, under medical supervision, or doing special work in speech, etc.).

Each candidate for a Ph.D. degree has a doctoral committee, appointed by the graduate council of the university, that reviews his written examinations, gives him an oral examination and reviews his dissertation. Each candidate must pass examinations in the translation of two foreign languages (normally French and German).

The graduate clinical psychologist is generally a bright young man or woman with a knowledge of and an interest in emotional factors as they relate to disease that too often exceeds that of our average medical school graduate and of the average practicing physician. They have been trained in research

methodology and have a good speaking acquaintanceship with medical terminology.

An appreciable part of their training has been obtained in hospitals and clinics. The medical profession has been most cooperative in making clinical facilities available to them and in most instances has assisted in varying degrees in their instruction.

In many respects they do not differ from the bacteriologist, biochemist or physiologist who has gotten a Ph.D. degree. The well-trained bacteriologist certainly knows more about the nature and method of transmission of pathogenic microorganisms than does the average physician. The physiologist with a Ph.D. degree has a knowledge of organ function that is generally vastly superior to that of the medical school graduate or average practitioner whom they help train.

One great difference between these specialists and the clinical psychologist is that an increasing number of the latter are interested in diagnosing and treating patients—in other words, practicing medicine. This was unheard of prior to World War II except for a very few psychologists who had obtained psychoanalytic training here or abroad and who entered the private practice of psychoanalysis. They made no pretense of doing so under medical auspices. During World War II, in addition to the unprecedented task of screening large numbers of inductees for emotional imbalance, the armed services were confronted with the need to take care of tremendous numbers of psychiatric disorders. There were approximately one million patients admitted to army hospitals for neuropsychiatric disorders. Of these, approximately 387,000 were given medical discharges; 163,000 more were given administrative discharges because of personality disorders, mental deficiency, sexual deviations and addictions. In May of 1945 (V-E Day) there were 2,400 physicians classified as psychiatrists in the army. Slightly over one-half of these had had psychiatric training that in most instances did not exceed three to six months.

Owing to this critical shortage of trained psychiatrists every effort was made to make as much use as possible of the services of psychologists, social workers and other ancillary workers. It was an emergency situation. In the calendar year 1945 alone there were 58,006 psychiatric casualties evacuated from overseas theaters to the United States who needed to be cared for.

It was in 1944 and 1945 that Dr. William C. Menninger,* assisted by Dr. Morton A. Seidenfeld and with the cooperation of Dr. Walter Bingham of the Adjutant General's office, succeeded in having 130 clinical psychologists transferred to the Medical Administrative Corps and in commissioning an additional 114 enlisted men who could qualify as clinical psychologists in hospitals.

Many of the psychiatrists in the services did not know how to use psychologists, and in some instances, especially with so many psychiatrists having the title more by virtue of a psychiatric assignment than by virtue of real training or experience, the psychologists knew more about psychotherapy than the men under whom they were working.

It was in this setting that the attitude so commonplace now had its inception—*i.e.*, Why should I who know more about psychotherapy than physicians and even many psychiatrists be prevented from utilizing my skill when there is such a critical need for psychotherapists? Why should physicians be permitted by law to diagnose and treat psychiatric patients just because they have an M.D. degree, while we who know so much more are not?

The Veterans Administration, like the army, was confronted with a psychiatric emergency after the war and, like the army, made every effort to obtain and train psychologists for use in hospitals and clinics. Dr. Miller, who was a psychologist as well as a physician (but not a psychiatrist at that time), as head of the psychology program set about to establish a "status for psychologists that was comparable to that of the physician."

What has this led to? On one hand, greater numbers of well-trained clinical psychologists have become available for work in medical settings. In psychiatric hospitals and clinics they have been available for testing patients, and for assisting in treatment and in doing research. Their importance in under-staffed state and veteran hospitals cannot be overemphasized. They have excelled in certain areas such as in doing speech retraining with aphasics and in group therapy. They have earned a respected and important place in the psychiatric team along with the more traditional members—the psychiatric nurse and the psychiatric social worker. (Although not objecting to being called a member of the psychiatric team, many psychologists object by virtue of their having Ph.D.'s to being mentioned along with nurses and social workers.)

On the other hand, more and more psychologists are leaving hospitals and clinics to enter private practice, and some to open their own clinics. They do so because they can make more money and because the medical practice act does not *specifically* prohibit them from doing so. In contrast to many doctors of philosophy in other fields, they are likely to place emphasis on their title *doctor*. In social situations some psychologists, by referring to having

*Psychiatry in a Troubled World (p. 244-5); The Macmillan Company, New York, 1948.

done such and such in their internships and having seen this and that kind of patient, attempt to convey the impression that they are physicians. By not clarifying their position with patients, they may pretend to be physicians or, more specifically, psychiatrists. The confusion that exists in the minds of patients who have been treated by psychologists cannot be attributed solely to the patient. Despite the fact that they have not been trained medically and are not physicians, some psychologists, including leaders in the profession, insist upon equal rights with physicians in hospitals. They see no reason why they should not be permitted to function as independently in a general hospital as an orthopedist or a neurologist.

There are some who profess the propriety of being medically supervised in their private practice. By this they mean a physician maintains responsibility for the physical care of the patient, but not that their own treatment is medically supervised. In some instances, while working as students in hospitals, they have objected to the psychiatric resident interfering in "their cases."

All of this adds up to the fact that persons who are not medically trained are assuming responsibility for the diagnosis and treatment of patients. They receive direct pay for their services and in many instances patients mistakenly believe that they are being treated by physicians, or do not have clear knowledge of what the difference is between a psychiatrist and a psychologist.

Physicians themselves are in great part responsible for this development. They make hospital and clinic facilities available for the training of the psychologist and assist in his training without any clear understanding about what the psychologist is being trained for. Out of ignorance, personal friendship or fear of losing patients to another physician, they refer patients to psychologists for diagnosis and treatment. The medical profession has not provided through its own leadership the opportunity for psychologists to utilize their skills in a legitimate and supervised way in the treatment of private patients. And finally, many physicians have not themselves taken sufficient interest in modern methods of treating patients with psychogenic disorders. Some physicians think patients will object less to being sent to a psychologist than to a psychiatrist. They are afraid patients will feel their sanity is being questioned if they are referred to a psychiatrist. In the old days patients were told they were being sent to a neurologist. Some physicians fear that if they send the patient to a psychiatrist they will not get him back. Some physicians think it will not cost the patient as much to be treated by a psychologist as by a psychiatrist, and some are still pretty disgruntled with psychiatrists because it was so difficult to get them to see patients during the war.

A psychologist, through continued supervised work with patients in psychiatric hospitals and clinics, may achieve a considerable degree of skill in working with patients, although there are important differences between him and a psychiatrist. In this respect he is like the radiology technician who, in the course of years of taking and developing x-ray films, develops a high degree of skill in taking films and in recognizing pathologic changes in them.

There is no reason why psychologists should be forced to stay in intramural work, but unless some means is developed for using them in private medical practice, they will go into practice on their own. If the psychiatric team is a feasible and practical approach to spreading the base of psychiatric treatment in hospitals and clinics, it should be applicable to private practice settings too.

In assisting in the diagnosis and treatment of patients, the psychologist should function as an assistant to the physician. This involves no compromise with the principle that prime responsibility for the diagnosis and treatment of the patient is the physician's. The patient is the physician's patient throughout, although the physician may delegate certain aspects of his function to a psychologist assistant as he now does to nurses, physiotherapists, laboratory technicians and other ancillary workers. The nature and degree of delegated responsibility will vary with the experience and competence of the psychologist.

According to principles of good medical practice, physicians do not employ assistants whose work they are unable to supervise. A radiologist may properly employ x-ray technicians, for he is in a position to know what duties to delegate and is competent to supervise what is done. He is not likely, however, to employ a physiotherapist or bacteriologist. He is not legally prevented from doing so but is guided by considerations of good practice. By virtue of his training and experience it is the psychiatrist who is qualified to supervise the work of the psychologist—be it in diagnosis or treatment—and until such time as the medical profession in general is better acquainted with the complexities of psychiatric diagnosis and with psychotherapeutic techniques and the indications for them, the use of psychologist assistants should be (in good medical practice) left to the psychiatrist. The psychiatrist should provide space, equipment and other needs for the psychologist. The psychologist should be paid a salary that is consistent with his training

and experience and with the level of responsibility that he can be assigned.

Many objections will be raised to such a plan. Some practitioners, without adequate psychiatric competence, will be tempted to have their own psychologist assistants (as many purchased and used their own electroshock machines) in order to avoid referring patients and the loss of income that might be involved. Some psychiatrists, interested in mass production and size of income, may be tempted to employ a staff of psychologists far beyond their ability to adequately supervise. Other psychiatrists will protest that the psychologist is not qualified to treat patients and they should therefore not be utilized in private practice by anyone (although they raise no objection to their working in clinics or hospitals). Other psychiatrists will not wish to be bothered taking on this additional responsibility and will take the position. "Let the psychologist practice if he wishes." These are the psychiatrists who have grown apart from medicine and its ever-present problem of maintaining high standards.

Psychologists can be expected to object most of all. The psychiatric supervision which is accepted and even sought in hospitals and clinics suddenly takes on an odious aspect because it is in conflict with private independent practice aspirations. They will accept the type of medical supervision that involves the physician's treating the patient's physical ills, while they treat the emotional ills. They are not concerned that this entails separation of the psyche and the soma—which medicine has labored so hard to bring together in recent years. Nor are they likely to be interested in the better psychiatric education of the medical profession, of which they are not a part. Some psychologists in private practice entice psychiatrists into acting as a consultant to them (for a fee): but this is done without the knowledge of the patient who continues to look upon the psychologist as his doctor.

Do-gooders with a pragmatic approach are usually more interested in quantity than quality and are not likely to be concerned with such immaterial matters as maintenance of educational standards or standards of practice or ethics. They recognize needs and seek to satisfy them regardless of cost or consequence. If it is psychotherapy that is required, then it matters little to them who provides it. The conservatism and caution and tradition of medicine with its deeply rooted preoccupation with a sense of responsibility for patients is considered outmoded and impractical.

The time has come for the medical profession to give careful consideration to this problem which is growing daily. The medical profession is making its facilities available to and assisting in the training of the clinical psychologist. Does it know for what they are being trained? Does it appreciate the significance of the increasing tendency of psychologists to use the terms *psychiatric help* and *psychologic help* as if they were synonymous? Is it aware of the tendency of an increasing number of psychologists to foster the belief that psychotherapy is the only important method of treatment in the care of patients with mental and emotional ills and that the psychologists are better trained to handle this phase of treatment and on an exclusive basis? Does it know of the contempt many psychologists have for the intuitive psychotherapy that physicians practice in their daily contact with patients?

Well-trained psychologists are concerned about the growing numbers of untrained persons who call themselves psychologists and engage in psychological practice; they are not as inclined to appreciate similar concern on the part of the medical profession with maintenance of its standards.

Psychologists in many states have been pressing for certification or licensing types of legislation. In at least one state (Tennessee) the proposed licensure bill includes *psychotherapy* in the definition of approved psychological practice.

In numerous discussions regarding the role of the psychologist in psychotherapy, the question is inevitably raised, "What is psychotherapy?" And the related questions: "Is the minister practicing psychotherapy when a member of his congregation seeks his advice regarding a marital problem? Is the school psychologist practicing psychotherapy when he discusses with a mother the maladjustment of her child in the classroom? Is a neighbor practicing psychotherapy when she comforts and advises the woman next door who is upset and comes to her for help?"

More specifically the question is asked, "Where does counseling end and psychotherapy begin?" In this connection one might ask: Is a citizen who administers first aid to an injured person practicing medicine? Is the neighbor who advises her friend to take an aspirin tablet practicing medicine? Is the mother who takes her child's temperature and looks at its throat practicing medicine? A major point in the answer to these questions is the *auspices* under which the aid is given or the action taken. And it is to be noted well that the citizen, the neighbor, the mother do not hold themselves out as practitioners.

California Law (Business and Professions Code, Division 2—Healing Arts, Chapter 5—Medicine, Article 3, Section 2141) states: "Any person, who practices or holds himself out as practicing any system or mode of treating the *sick*, or *afflicted* in this state, or who *diagnoses*, treats, operates for,

or prescribes for any ailment, blemish, deformity, disease, disfigurement, disorder, injury, or other mental or physical condition of any person without having at the time of doing so a valid unrevoked certificate as provided in this chapter is guilty of a misdemeanor."

Section 2013 of Article I of the same law states, "Whenever the words *diagnose* or *diagnosis* are used in this chapter, they include any undertaking by any method, device, or procedure whatsoever, and whether gratuitous or not, to ascertain or establish whether or not a person is suffering from any physical, mental, or nervous disorder . . ."

"The performance of psychological services on referral from a person licensed under this chapter is not a violation of this chapter. Testing and guidance programs in schools, colleges, and universities and physical fitness tests given by public or private agencies in connection with employment or issuance or renewal of licenses or permits do not constitute diagnosis within the meaning or intent of this section."

The term *psychological services* does not imply the diagnosis and treatment of mental ailments, disorders or conditions.

It is of interest that the Business and Professions Code specifically provides that a registered physical therapist shall not treat human ailments by physical therapy or otherwise except under the supervision and direction of a physician and surgeon.

No provision now exists for the certification of clinical psychologists. The need for some regulation of the use of the term *psychologist* has been felt increasingly by well-trained psychologists in order to protect the public from quacks and inadequately trained and incompetent people who present themselves to the public as psychologists. This is a particularly serious problem in Los Angeles.

Any law that is introduced to eliminate the quack psychologist should specifically define psychotherapy and prohibit the treatment of mental or emotional disorders by psychologists except when it is under the supervision and direction of a physician. Otherwise there is great danger that licensing or certification would be used by many psychologists to engage in independent practice of diagnosis and treatment of patients with emotional and even psychosomatic illnesses.

This already threatens to develop in New York State where, because of lack of vigilance and even lack of interest on the part of the medical professions and because of ignorance or misunderstanding on the part of the public, a statute has been passed providing for certification of clinical psychologists. A completely independent board of examiners, composed entirely of psychologists is created. In the opinion of legal counsel for the California Medical Association, the statute creates a new legally authorized profession which in the absence of any legal controls will establish its own area of function. Counsel noted that while the statute contains a provision which states that practicing medicine is not authorized, the newly established board cannot be expected to have any real interest in enforcing this provision. The net effect of the New York State law, it was concluded, was to create a wholly independent, self-determining profession that will compete with doctors of medicine who specialize in psychiatry, in the diagnosis of mental disorders and the utilization of psychological methods of treatment. Counsel was of the opinion that there is no difference between certification and licensure as far as the New York law is concerned.

Psychologists in California are pressing for similar legislation not only at the state but also at the local level. As recently as September 12, 1956, a Los Angeles City Councilman presented a resolution to the city council in support of an ordinance to certify or license psychologists.

The medical profession is obligated to take its traditional role in providing the best treatment for the largest number of patients who are in need of it, and psychotherapy is an inherent part of treatment. A physician who accepts responsibility for the treatment of a patient assumes full medical responsibility, and while he may utilize the services of other disciplines, he cannot relinquish to a nonphysician his medical responsibility. To this end, it is important that increased attention be given to the psychiatric instruction of physicians in medical schools, in internships and residencies and in postgraduate education. It is as important for every physician to have knowledge of the basic principles of the diagnosis and treatment of mental and emotional disorders, as it is for them to have such knowledge about diabetes and heart disease. If the medical profession is to encourage and participate in the training of clinical psychologists as members of the psychiatric team, it is important that psychiatrists provide the opportunity for them to function in this capacity in private practice settings.

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Mumps Meningoencephalitis

A Clinical Review of 119 Cases with One Death

HENRY B. BRUYN, *M.D.*, HAROLD M. SEXTON, *M.D.*, and HENRY D. BRAINERD, *M.D.*, San Francisco

• **Mumps is one of the most common viruses to affect the central nervous system and should be given primary consideration in the differential diagnosis of aseptic meningitis. Many cases of mumps infection do not involve the salivary glands.**

The course of mumps meningoencephalitis is usually benign, with fever and signs of meningeal irritation lasting less than five days. The findings in the cerebrospinal fluid are usually distinctive, with leukocyte content greater than 200 per milliliter, of which 80 per cent or more are lymphocytes. Sequelae, even of a minor nature, are rare.

Death is extremely rare in recorded literature. A fatal case of mumps meningoencephalitis is described herein.

Mumps is a generalized, systemic, virus infection in which the salivary glands are commonly affected and in which inflammation of the central nervous system occurs with such frequency that it can hardly be considered a complication. In fact, the virus of mumps could be said to be one of the most common viral agents to affect the central nervous system. Despite the extensive literature attesting these facts, there still exists the widespread impression that mumps meningoencephalitis is a rare complication.

Hamilton[10] in 1790 presented one of the first formal reports of "A Distemper, By the Common People in England Vulgarly Called the Mumps." In this very carefully written report he described the usual course of this disease and stressed the frequency of central nervous system involvement. It was his opinion that inflammation of the testicles and the brain was the result of failure of a proper diaphoresis of the affected parts. He described one death due to this "tumult of the brain." It is interesting that this author noted that the disease was generally confined to young men from the age of puberty to about 30 years and stated that he had never seen any females above ten years of age affected by this illness.

A unique feature of mumps is the observation of pleocytosis, as evidence of inflammation of the central nervous system, unaccompanied by any clinical symptoms of encephalitis or meningitis. Monod[18] was the first to report this symptomless meningoencephalitis. He noted increased leukocyte content in the spinal fluid of six of eight patients with mumps.

In the literature of the last 50 years there have been a number of investigations of mumps with reports of the incidence of central nervous system involvement. Table 1 summarizes a number of these reports. The rather wide variation in the incidence of clinically apparent nervous system disease will be noted. While it is true that the factor of clinical judgment modifies data of this type, it is nevertheless rather hard to escape the conclusion that the virus may vary from one epidemic to the next in neurotropic quality. Henderson's[11] report of 11 cases of clinically apparent central nervous system involvement in a total of 14 cases of mumps infection, was most striking.

It is, however, rather difficult to reconcile the incidence in 1918-1920 U. S. Army camps of 0.01 per cent of clinically apparent mumps meningoencephalitis with the usual 10 to 30 per cent incidence reported since then. It would seem likely that a more careful clinical evaluation with the possibility of central nervous symptoms in mind would have raised this incidence rather sharply. Despite such variations it would seem safe to presume that in 30 to 40 per cent of cases of mumps infection there will be central nervous system involvement with clinical symptoms not necessarily apparent.

The exact pathogenesis of this central nervous system involvement by the virus has been given consideration since Hamilton,[10] over 150 years ago, looked upon it as the result of a disturbance of the course of the natural "humors" of the disease. Over 40 years ago Dopter[6] suggested that the mumps virus should be considered as being primarily in the meninges rather than to "consider the meningitis as a complication." His study of a large number of cases of mumps is summarized in Table 1.

Some 20 years ago Philibert[21] restated the belief, on the basis of the frequency of the occurrence of pleocytosis, that the virus of mumps was primarily neurotropic. He felt that the disease might be primarily one of the central nervous system, as illus-

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TABLE 1.—*Incidence of Meningoencephalitis In Mumps, Clinically Apparent or Inapparent, as Summarized from Published Investigations*

Authors	Year	Total Cases Studied	Incidence Clinically		Total Central Nervous System Incidence (Per Cent)
			Apparent (Per Cent)	Inapparent (Per Cent)	
Dopter[6]	1910	1,705	10	....	....
U. S. Army Medical Department (Wesselhoeft[25] data)	1918-20	9,690	0.01	....	....
Silwer[22]	1936	30	....	10	....
Greene and Heeren[6]	1937	100	11	....	....
Finkelstein[7]	1938	40	25	15	40
Frankland[8]	1941	234	30	....	....
Bang and Bang[2]	1943	371	29	36	65
McGuinness and Gall[17]	1944	1,378	4	....	....
Steinberg[23]	1944	165	10	....	....
Holden, Eagles and Stevens[14]	1946	100	33	8	41
Laurence and McGavin[16]	1948	235	4	....	....
Henderson[11]	1952	14	78	....	....
Bowers and Weatherhead[3]	1953	250	25	....	....

trated in several cases which he reported in which meningitis preceded parotid gland involvement.

These early hypotheses received eventual confirmation in the isolation and identification of the mumps virus from cerebrospinal fluid. Swan and Mawson,[24] in 1943, accomplished the isolation of the virus from pooled saliva as well as from cerebrospinal fluid inoculated into the parotid glands of rhesus monkeys. Later, in 1947, Henle and McDougall[12] isolated the mumps virus from the cerebrospinal fluid taken on the second day of disease and injected into the amniotic fluid of fertile hens' eggs that had been in incubation for eight days. The virus was identified by specific hemagglutination tests. It is now well accepted that such virus isolation from cerebrospinal fluid is easily done by this method.

It would thus seem that the central nervous system is directly involved with mumps virus invasion and that the signs, symptoms and laboratory findings are not of a nonspecific type sometimes found in other viral diseases.

The present study, a review of 119 cases of mumps meningoencephalitis in patients who were cared for at the San Francisco Hospital, is presented in order to stress not only the frequency of such manifestations of mumps virus infection but also to review briefly the clinical features and the typical laboratory findings. A single fatal case will be presented in detail because of the rarity of this result and the lack of detailed pathological findings available in the recorded literature.

MATERIAL AND METHODS

All the patients upon which the present investigation is based were hospitalized on the isolation ward of the San Francisco Hospital in the 12-year period 1943-1955. All were observed by one of the present investigators. Records were studied in which the diagnoses at the time of discharge included mumps or infectious parotitis, as well as records including a diagnosis of encephalitis of unknown origin, or septic meningitis. In the earlier years of the period covered by this study, the importance and frequency of central nervous system involvement in mumps was not fully appreciated and several of the patients whose cases are reported herein were discharged with a diagnosis of encephalitis of unknown origin, as well as infectious parotitis. The criteria for attributing central nervous system disease to mumps virus were: (1) parotitis or other salivary gland involvement typical of mumps; or (2) a significant rise of either hemagglutination inhibition antibody or complement fixing antibody. Also included in the series were three cases. before 1948, in which the clinical manifestations of central nervous system disease resembled those of mumps meningoencephalitis and in which a history of exposure and compatible incubation period for mumps was well established.

Serological tests were performed after 1948 at the Infectious Disease Laboratory of the San Francisco Hospital or at the State of California Department of Public Health Viral and Rickettsial Disease Laboratory. Central nervous system involvement in this series of cases was invariably clinically apparent with obvious signs of meningeal irritation. In most cases, lumbar puncture was done and the finding of more than 10 leukocytes per milliliter of cerebrospinal fluid was considered abnormal. In a few instances, the observation of signs of meningeal involvement accompanying parotitis was considered sufficient to establish the clinical diagnosis without examination of cerebrospinal fluid.

RESULTS

During the 12 years covered by the present study there was a total of 119 cases at San Francisco Hospital that met the criteria set down for the diagnosis of mumps meningoencephalitis. Data on the number of cases of mumps each year in San Fran-

cisco and the number of patients with mumps meningoencephalitis admitted to San Francisco Hospital are given in Table 2. The number of patients with central nervous system involvement admitted to the hospital bore no relationship to the total number of cases of mumps reported in the community. In 1945, for example, with 4,741 cases of mumps reported in the city and county, there were 19 patients with central nervous system involvement admitted to the San Francisco Hospital. On the other hand, in 1952, with 1,822 cases of mumps reported, there were 27 patients with mumps meningoencephalitis admitted to the San Francisco Hospital. It would seem that this disparity could be due to a large number of factors—such as varying diagnostic acumen or special interest of house officers and the varying severity of the symptoms of mumps meningoencephalitis. It would, therefore, be quite wrong to state that the 119 cases of mumps meningoencephalitis represented a rate of 0.4 per cent of all the cases of mumps in San Francisco. It may be noted in this connection that commencing in 1948, with the introduction of serologic diagnostic facilities at the San Francisco Hospital, the observed incidence of central nervous system involvement without parotitis increased. (The three cases in the previous years were mentioned in the discussion of diagnostic criteria.)

Of the 119 patients, 84 males and 35 females, twenty-four were negroes. Ninety of the patients were less than 20 years of age and 65 of them were under the age of 10 years. There was only one patient more than 40 years of age.

In 79 cases (66.4 per cent) a diagnosis of mumps or of mumps encephalitis was made at the time the patient was admitted (Table 3). It should be restated, however, that in the early years of the period covered by the present study the possibility of central nervous system involvement in this disease was not often recognized and subtle symptoms were occasionally missed upon admission. Correct diagnosis of "mumps encephalitis" upon admittance occurred predominantly in the last six years of the period.

It will be noted that there were four patients admitted with the diagnosis of mumps orchitis, with central nervous system involvement detected later. It should be emphasized that the reason for admitting a patient with mumps to the hospital was usually related to some factor besides the etiological diagnosis. It is probable that severity of parotitis was such a factor and central nervous system involvement was detected subsequently. This factor would apply in the four cases of mumps orchitis which, of itself, would be a strong reason for admission.

The diagnosis of "possible poliomyelitis" was made on admission in 11 cases. In two such cases, parotid involvement was present at the time the tentative diagnosis was made. This is mentioned here because the diagnosis of poliomyelitis in the face of parotid swelling dramatizes the all too common ignorance of the potentialities of the virus of mumps. In the differential diagnosis of the syndrome of "nonparalytic poliomyelitis," mumps should be considered as a prominent possibility even in a known poliomyelitis epidemic.

The remaining diagnoses upon admittance represented a variety of symptom complexes, many of them compatible with mumps meningoencephalitis. In the case of "fever of unknown origin," meningismus was detected upon arrival at the ward and lumbar puncture was done on the day of admission. The case of cervical adenitis was found to be one of submaxillary mumps. The patients admitted "for psychiatric observation" and "for observation" were very lethargic and disoriented on admission. Most

TABLE 2.—*Mumps Meningoencephalitis at San Francisco Hospital*

Year	Cases of Mumps Reported in San Francisco	Parotitis CNS* (SFH)†	CNS only (SFH)	Total CNS (SFH)
1943	1,643	6	1	7
1944	2,058	5	0	5
1945	4,741	18	1	19
1946	809	1	1	2
1947	832	4	0	4
1948	3,044	7	1	8
1949	1,734	7	1	8
1950	1,987	10	1	11
1951	1,358	7	5	12
1952	1,822	18	9	27
1953	2,925	6	1	7
1954	1,331	4	0	4
1955	1,368	3	2	5

*CNS = Central nervous system involvement.
†San Francisco Hospital.

TABLE 3.—*Diagnosis at Time of Admittance in Cases of Mumps Meningoencephalitis at San Francisco Hospital*

Diagnosis	CNSD* with Parotitis	CNSD only	Total
Mumps	32	....	32
Mumps encephalitis	44	3	47
Encephalitis	....	1	1
Meningitis	2	7	9
Mumps orchitis	4	....	4
Possible poliomyelitis	2	9	11
Fever unknown origin	1	1	2
Cervical adenitis	1	....	1
For psychiatric observation	1	....	1
Otitis media	1	....	1
Acute pyelonephritis	....	1	1
Pelvic inflammatory disease with cystitis	1	....	1
Acute tonsillitis	1	....	1
For observation	1	1	2
Meningococcemia	1	....	1
Pharyngitis	1	....	1
Central nervous system lesion	1	....	1
None given	2	....	2

*CNSD = Central nervous system disease.

TABLE 4.—*Comparison Between Diagnostic Impression of Physician and Ultimate Serological Results in Proved Cases of Mumps Meningoencephalitis (Data from State of California Department of Public Health Virus and Rickettsial Disease Laboratory)*

Year	Total Tested for Mumps	Total Positive for Mumps	Number with		Per Cent Positive with Mumps or Meningoencephalitis Diagnosis	No. with Encephalitis, Meningitis, Poliomyelitis or LCM†	Per Cent Positive with Encephalitis or Other
			Mumps*	Meningoencephalitis*			
1952....	2,113	152	51	40	59.8	61	40.2
1953....	1,626	210	66	76	67.6	68	32.4
1954....	1,729	227	64	100	72.2	63	27.8
1955....	1,674	143	62	48	76.9	33	23.1

*Stated as diagnostic possibility on form completed by physician submitting blood specimens to laboratory.
†Includes diagnoses of "lymphocytic choriomeningitis," "encephalitis of unknown origin," and viral nervous system infections.

of the remaining diagnoses represented valid disease states present in patients who were found later to also have central nervous system involvement with mumps.

By way of further studying the diagnostic impression of the physician in cases of mumps meningoencephalitis, data were collected from the records of the State of California Viral and Rickettsial Disease Laboratory.* These data (Table 4) show an increasing incidence of correct diagnostic impression on the part of the physicians submitting specimens of blood to the laboratory for serological diagnosis in the four years 1952-1955, inclusive. The data also show that the number of physicians who did not consider mumps as an etiologic possibility in cases of central nervous system disease, steadily decreased in the period. It should be emphasized that the data deal only with cases of mumps meningoencephalitis in which serological specimens were submitted for diagnosis and should not be construed as reflecting the total incidence of this disease in the state.

The chief complaints or first symptoms noted on admission of the 119 cases of mumps meningoencephalitis are summarized in Table 5. With very few exceptions, the symptoms were referable to central nervous system disease or parotitis. The single case of hematuria was observed in the patient with acute pyelonephritis listed in Table 5.

Laboratory findings in these cases make a significant contribution in diagnosis. The most important studies in this category were determination of the leukocyte content in peripheral blood and the examination of the cerebrospinal fluid. The total leukocyte count in 101 of the 119 cases was less than 12,000 per cu. mm.; in the remaining 18 cases it did not exceed 16,000.

Laboratory examination of the cerebrospinal fluid provides the most significant criteria for establishing the diagnosis of mumps meningoencephalitis. Often the findings are so characteristic that mumps may be presumed even in the absence of salivary gland involvement.

*These data were obtained through the courtesy of Edwin H. Lennette, M.D., Chief, Viral and Rickettsial Disease Laboratory, State of California, Department of Public Health.

TABLE 5.—*Frequency of Various Presenting Symptoms in Cases of Mumps Meningoencephalitis at San Francisco Hospital*

First Symptom or Complaint	CNSD* with Parotitis	CNSD only
Parotid swelling	59	....
Headache	31	15
Anorexia	5	1
Fever	13	10
Vomiting	21	8
Lethargy	12	5
Submaxillary pain	3	....
Abdominal pain	2	5
Stiff neck	6	1
Convulsions	2	....
Painful chewing	1	1
Upper respiratory tract infection	1	3
Chills	1	....
Tremulousness	1	....
Back pain	4	1
Irritability	2	1
Earache	4	....
Sore throat	2	1
Diarrhea	2	1
Pain in testicles	2	....
Hematuria	....	1
Frequency	....	1
Pain in eyes	....	1
Difficult walking	....	2

*Central nervous system disease.

Lumbar puncture was carried out in all but 18 of the 119 cases. In these 18 cases, diagnosis seemed to be so clear that further laboratory study was deemed unnecessary. With only two exceptions, the spinal fluid pressure was within normal limits; in these two exceptions the pressure was elevated only slightly.

The leukocyte content of the cerebrospinal fluid in 101 cases is summarized in graphic form in Chart 1, which also gives the same data on 708 cases of poliomyelitis which were studied during an epidemic in Buffalo, New York, in 1944.[4] Distinguishing between mumps meningoencephalitis and poliomyelitis without apparent paralysis is a common diagnostic problem. It is apparent from Chart 1 that in many cases the leukocyte content of the cerebrospinal fluid will help resolve this problem. In 55.3 per cent of the cases of mumps meningoencephalitis the leukocyte content exceeded 200 per milliliter of cerebrospinal fluid; this concentration was noted in only

11.5 per cent of the cases of poliomyelitis. The corresponding ratio for leukocyte content of more than 40 per milliliter was: For mumps meningoencephalitis, 26.7 per cent; for poliomyelitis, 1.8 per cent.

The character of leukocytes in the spinal fluid was also of great significance. Differential count was carried out in 96 cases. In 91.6 per cent of these cases lymphocytes made up 80 per cent or more of the total; in 69.7 per cent of the cases the proportion of lymphocytes exceeded 90 per cent. There were only two cases in which the first specimen of cerebrospinal fluid showed predominantly polymorphonuclear leukocytes and, in both of these cases lymphocytes predominated in later specimens. There were seven cases with 70 to 80 per cent lymphocytes and six cases with less than 70 per cent lymphocytes. These findings would seem to contrast with those in poliomyelitis in the early stages, where 50 per cent or more of the cells may be polymorphonuclear leukocytes.[20]

Multiple lumbar puncture was carried out in only ten cases. In two of these cases the leukocyte content exceeded 30 cells per milliliter of fluid on the twentieth day of disease. In neither case were there symptoms of central nervous system disturbance at the time of the last lumbar puncture.

Chemically the spinal fluid was within normal limits, with the exception of a small number of cases showing a slight elevation of protein and correspondingly positive reaction to the Pandy test.

The hospital course in most of these cases was entirely without complication and most patients were discharged between six and ten days after admission. The significant exceptions to this benign course are reported in case histories presented later in this communication. Ninety of the 119 patients had body temperature of 102°F. or more within the first three days of hospitalization. The febrile reaction was usually less than three days in duration. Nine patients had fever for over five days of hospitalization. In one case fever persisted for 13 days. With respect to severity of disease there were no apparent differences between patients above 15 years of age and younger patients. There was a notable absence of neurological sequelae.

The following reports of cases are presented to give examples of various features of the usual clinical course of mumps meningoencephalitis.

CASE 1. *Mumps with salivary gland involvement following appearance of central nervous system symptoms.*

A 22-month-old white boy was admitted with a diagnosis of mumps encephalitis. Two weeks before admission, a sibling had had mumps with bilateral parotid involvement. Five days before admission, the patient began to be extremely irritable and vomited several times each day. Two days before admission there was a swelling on the right side of the face.

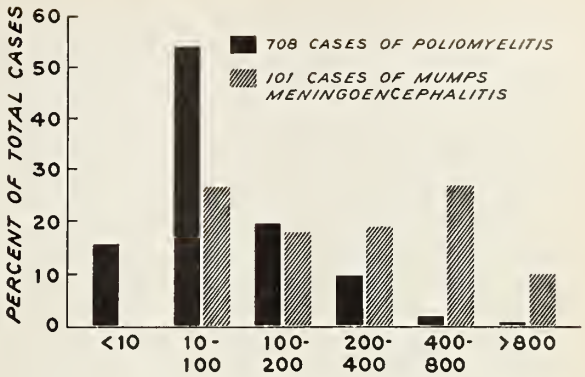

Chart 1.—Leukocyte content of cerebrospinal fluid in poliomyelitis (from epidemic in Buffalo, N. Y., in 1944) and mumps meningoencephalitis (San Francisco Hospital series).

The child, who appeared to be in no acute distress, had bilateral submandibular salivary gland swelling and a temperature of 104°F. rectally. There was slight stiffness to the neck but the back was supple.

Leukocytes numbered 11,000 per cu. mm. of blood—68 per cent lymphocytes.

A specimen of cerebrospinal fluid drawn the first day contained 740 leukocytes per milliliter—85 per cent lymphocytes. The protein content was 41 mg., sugar 61 mg. and chlorides 684 mg. per 100 cc.

The body temperature ranged between 101 and 102°F. for the first two hospital days and then remained within normal limits. On the third hospital day the results of physical examination were entirely within normal limits.

Serological tests showed hemagglutination inhibition titer against mumps on the first hospital day of 1:32, with a subsequent specimen taken a week later showing a titer of 1:256.

The patient was discharged after eight hospital days.

CASE 2. *An example of mumps parotitis without clinical evidence of central nervous system involvement and with cerebrospinal fluid changes consistent with mumps meningoencephalitis.*

A ten-year-old negro girl was admitted with a history of pain on eating and a swollen neck one week before admission, at which time mumps was diagnosed in a male sibling. These symptoms had subsided in three days. Then, three days before admission, the body temperature was 103°F. and the patient had headache, pain in the neck, a nasal discharge and cough.

Upon physical examination generalized slight enlargement of the lymph nodes was noted, without involvement or enlargement of the parotid or submaxillary glands. There was no evidence of nuchal rigidity, back pain or stiffness. The temperature was 104.3°F.

In view of the history of exposure to mumps and suggestion of parotitis before admission, lumbar puncture was performed. The cerebrospinal fluid contained 490 cells per milliliter, all lymphocytes, the protein content was 37 mg. per 100 cc., sugar 92 mg. and chlorides 867 mg. Examination of the cerebrospinal fluid was carried out six days after admission (13 days from onset of disease) and there were then 483 cells per milliliter—almost all lymphocytes. Another specimen, taken 21 days after onset of illness, showed 30 cells per milliliter—again all lymphocytes.

Serological examination of a specimen of blood taken on admission showed hemagglutination inhibition titer against mumps of 1:32. A specimen one week later had a titer of 1:128.

The temperature was 101°F. on the second hospital day, and thereafter remained within the normal range.

Case 3. *An example of pronounced meningeal involvement without evidence of salivary gland infection.*

A six-year-old negro boy was admitted to hospital with a diagnosis of meningitis of unknown cause. Eleven hours before entry he had complained of a sudden and severe pain in the back of the head and was noted at that time to be feverish. About five hours later he awoke crying and complaining of a severe headache.

When examined on admission he was rational and cooperative but lethargic and complaining of pain in the back of the head. The temperature was 103.8°F. Petechiae were noted in the bulbar conjunctivae and in both axillae. The blood vessels in the pharynx were moderately engorged. The tongue was heavily coated. The neck was stiff to anterior flexion and the reaction to Kernig's test was bilaterally positive.

Leukocytes numbered 8,500 per cu. mm. of blood —20 per cent lymphocytes and 80 per cent polymorphonuclear cells. The cerebrospinal fluid contained 810 leukocytes per milliliter, 50 per cent of which were polymorphonuclear. The protein content was 47 mg. and the sugar content 86 mg. per 100 cc. No organisms were seen on a Gram-stained specimen of the concentrated sediment. Bacteriological cultures were reported later as negative for pathogenic organisms.

In view of the prominent possibility of meningococcic meningitis, sulfadiazine and penicillin were given parenterally. On the day of admission the patient had a convulsive seizure of grand mal type which lasted about five seconds, following which the abdomen became decidedly distended. On the following hospital day, the condition of the patient seemed to improve but prominent abdominal distention remained. The patient had a stiff neck and complained of headache. The sensorium appeared clear, but he was very irritable.

A specimen of cerebrospinal fluid taken the second hospital day contained 842 leukocytes per milliliter, of which 90 per cent were lymphocytes.

On the third hospital day, neck stiffness had decreased considerably and the body temperature was within normal range. On the 12th hospital day the cerebrospinal fluid contained 140 leukocytes per milliliter, all lymphocytes.

The patient was discharged from the hospital on the fifteenth hospital day.

Hemagglutination inhibition antibody titer in this case rose from less than 1:8 on the third hospital day to 1:512 nine days later.

Case 4. *A fatal case of mumps meningoencephalitis.*

A white boy 10 years of age was admitted to hospital with a diagnosis of mumps encephalitis. Eight days before admission he had had bilateral swelling of the face accompanied by warmth and tenderness. Two weeks before admission, a 15-year-old brother had had mumps and three other siblings had mumps with parotitis at the time of admission. Four days before entry the patient had vomited but had not complained of headache or pain in the back of the neck. Since that time he had vomited several times each day and on the day of entry had had a generalized convulsion, the whole body becoming rigid, arms flexed, hands clenched, the eyes wide open and staring. This seizure had lasted approximately five minutes and was followed by repeated episodes of stiffening and relaxation of the whole body over the two-hour period before entry into the hospital, during which time the patient did not seem to be conscious. There was no history of previous convulsive episodes. It should be noted that four months previously this child had been injured in a bad fall and upon x-ray examination a short linear skull fracture was noted in the right occipital parietal region.

When examined upon admittance the child seemed to be in a coma. The temperature was 99.4°F. The skin was dry, but without petechiae. The eyes were rolling from side to side and the pupils were dilated but equal. The tongue was bleeding slightly from a laceration. No rigidity of neck or back was noted. The submaxillary salivary glands were large and hard. The extremities were held stiff. Reflexes were normal.

Leukocytes numbered 19,550 per milliliter—63 per cent polymorphonuclear cells.

The cerebrospinal fluid contained 22 lymphocytes per milliliter. The protein content was 37 mg., sugar 107 mg., and chlorides 704 mg. per 100 cc. Cultures of blood and of cerebrospinal fluid were subsequently reported as negative for pathogenic organisms.

The body temperature rose steadily to 107°F. in spite of control measures, and the patient died approximately four hours after admittance. Autopsy was done at the Coroner's office of the City and County of San Francisco and the following pathological findings were reported:

"Significant gross and microscopic findings were confined to the central nervous system. The brain

and meninges were grossly edematous with extreme flattening of the gyri and sulci. There was no apparent skull fracture. The brain weighed 1,575 gm. and measured 18 x 15 x 10 cm. The undersurface of both frontal lobes contained fine areas of brown discoloration involving the gyris recti on both sides. Numerous small areas of hemorrhage were seen in the leptomeninges. The hemispheres were symmetrical, with flattened convolutions and shallow sulci. The surface vessels of the brain were markedly congested. Cut sections through the brain showed symmetrical, undilated ventricles and smooth ependymal linings. On the right lateral surface of the brain at the base of the temporal lobe, there were two areas of degeneration approximately 1 x 1 x 1½ cm. running down through the external and internal pyramidal layers. There was no gross evidence of encephalitis.

"Microscopically there were many areas with degeneration of nervous substance and infiltration with lymphocytes. There was an unusually large collection of compound granule cells. The deep small vessels of the brain were congested and surrounded by thin collections of lymphocytes."

The pathological diagnosis was posttraumatic degeneration accompanied by meningoencephalitis. No virus isolation studies were undertaken.

DISCUSSION

It is clear from the recorded literature and from the observations reported herein that mumps meningoencephalitis should be a commonly encountered condition in pediatric and general practice. It has also been apparent that this observation is not commonly appreciated.

Mumps meningoencephalitis is probably the most common cause of the syndrome of "aseptic meningitis." The diagnosis of mumps as the cause for such a central nervous system condition is based on a number of criteria, of which the presence of parotitis or history of exposure to mumps would be the most significant. It should be strongly emphasized, however, that a very substantial proportion of persons undergoing infection with mumps virus will have no signs of salivary gland involvement.[13] Furthermore, it has been demonstrated serologically that a significant proportion of cases of "aseptic meningitis," in the absence of parotid or salivary gland involvement, are, in fact, due to mumps virus.[15] The small proportion in the present series of cases in which there was no parotid involvement does not reflect the true proportion of such cases, but rather reflects the factors leading to admission to the hospital.

The clinical findings in cases of mumps meningoencephalitis often will suggest the proper etiological diagnosis. In most cases, meningismus subsides rapidly along with the fever, over the course of two or three days. This is in contrast to poliomyelitis, in which the stiffness of neck or back may become more severe after the temperature has subsided. The absence of any weakness would certainly raise the question of mumps as an etiologic possibility. In severe cases of mumps meningoencephalitis in which coma and lethargy and high fever are prominent symptoms, a variety of other viral encephalitides will remain prominent in the differential diagnosis.

One of the most commonly encountered situations in which the differential diagnosis should be satisfactorily resolved is that of the patient for whom the diagnosis of poliomyelitis with clinically inapparent paralysis is considered. If mumps can be diagnosed as the cause, then all the long term considerations attendant upon the diagnosis of poliomyelitis may be dismissed. On the other hand, if proof of mumps is not forthcoming, long term follow-up with careful examinations to detect the appearance of muscle weakness will be necessary. The economic implications of this situation would seem obvious.

It is often necessary for the physician to depend upon serological studies to establish the diagnosis of mumps meningoencephalitis. These tests are readily available through the State of California Department of Public Health Viral and Rickettsial Disease Laboratory in Berkeley, provided local facilities are not available. Such laboratory studies should be given early consideration and appropriate blood specimens should be submitted to the laboratory. In a case where viral encephalitis is considered a likely cause for the clinical condition, an early or "acute" blood specimen should be obtained and stored for possible future use for serological comparison with a later or "convalescent" specimen.

The usual course of mumps meningoencephalitis is self limited and so benign as seldom to indicate hospitalization. Since the findings in the spinal fluid may be of much importance in establishing the diagnosis, it is probable that many patients will require hospitalization for the performance of a lumbar puncture and a short period of observation.

Permanent sequelae following mumps meningoencephalitis would seem to be a rare occurrence. Oldfelt[19] in a follow-up study of 75 such cases found mild sequelae in 20 per cent. These consisted of dizziness of vestibular type, recurrent headaches, deafness, and one instance of epilepsy. Laurence and McGavin[14] in a follow-up of 235 cases found mild sequelae in eight cases (3.4 per cent). These consisted principally of recurrent headache and, in one case, facial nerve paresis. In the present investigation, although long term follow-up was not done, there were no sequelae noted at the time of discharge from the hospital.

Death due to mumps meningoencephalitis would seem to be an extremely rare event. A review of the

literature reveals remarkably few cases in which death can be safely interpreted as due to this disease. Acker[1] in reviewing the literature up to 1913 collected reports of eight cases, in most of which death could have been due to bacterial meningitis—in the light of present knowledge. He reported a single case of death clearly due to mumps meningoencephalitis. Donohue[5] in a review of the literature came to similar conclusions and reported a single fatal case of mumps meningoencephalitis accompanying parotitis. He described the fundamental pathological picture to be a perivascular demyelinization process. Including the fatal case herein reported, there are three cases of death due to mumps meningoencephalitis in the recorded literature. It is obvious that many other fatal cases may have occurred without a formal published report. However, on the basis of present knowledge, this disease is very rarely fatal.

The possible role of previous trauma in the fatal case reported here is of some interest. While it seems clear that the brain was damaged by the blow on the head four months before the onset of mumps, the pathological findings did not indicate that this damage contributed to death. It would be of interest to speculate on the role of such trauma, however, in making an otherwise benign viral encephalitis process more severe.

On the basis of the three fatal cases available for study, it would seem that the encephalitis process in mumps meningoencephalitis is similar to that caused by other neurotropic viruses and such pathological findings would not be of specific diagnostic significance.

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The Cardiac Team

WALLACE O. AUSTIN, *M.D.*, FORREST H. ADAMS, *M.D.*, and LESLIE HOLVE, *M.D.*, Los Angeles

An Introduction to a Symposium on Congenital Heart Disease

IT IS APPROPRIATE that a symposium on congenital heart disease begin with a discussion of "the cardiac team." Great contributions have been made in recent years as a result of the *combined* efforts of many persons working on the problem of cardiovascular disease. The results have been most dramatic in the field of congenital heart disease. It appears that it has been in those institutions and situations where there has been a *team effort* that the contributions have been the greatest.

What is the composition of a cardiac team? The composition of the team on which the authors serve is as follows:

DIAGNOSTICIAN

INTERNIST	PHYSIOLOGIST
PEDIATRIST	ANATOMIST
RADIOLOGIST	PATHOLOGIST
SURGEON	ANESTHETIST

Of course this may vary from one situation to the next, depending upon the purpose for which the team was organized. The patient's physician should always be the director of the team. Although the advice and help of others is valuable in attaining the goal of optimal health, the patient's physician or diagnostician should not relinquish this responsibility to any board of advisors. The purposes for which the cardiac team here reported upon was formed were:

¶ To assist in the resolution of a clinical problem by: Advising regarding special studies; interpreting results of clinical data; recommending special therapy.

¶ To critically evaluate existing diagnostic and therapeutic procedures.

¶ To suggest and initiate areas of research.

For efficient functioning a cardiac team should meet regularly, preferably once a week, and it should maintain a certain basic composition, using consultants as indicated. Only by meeting frequently can the various members be fully cognizant of each other's special problems, interests and abilities.

Data concerning the patients observed in the pediatric clinic and wards of the University of California at Los Angeles Hospital during the first six months of its operation beginning July 1, 1955, will serve to illustrate the need for a cardiac team. Of a total of 115 patients, 52 in-patients and 63 out-patients, examined by the pediatric cardiologists in that period, 21 per cent were thought to have functional problems and 79 per cent to have organic disease of the heart. Fifty per cent of the total number of patients required special diagnostic studies, either cardiac catheterization or angiocardiography or both, and 29 per cent had surgical treatment. Thirty-three per cent of the out-patients but only 6 per cent of in-patients had functional disease. Some of the out-patients had had special diagnostic studies and operations elsewhere before the opening of the U.C.L.A. Medical Center. A striking fact with regard to in-patients was the high proportion of cases in which special studies were needed (85 per cent) and the high proportion with operable lesions, 44 per cent. The greatest incidence of need for special diagnostic study was in patients less than one year of age, the age bracket in which most of the congenital heart lesions have atypical manifestations. The indications for special diagnostic studies and surgical operation will vary from one clinic or institution to the next and will also vary from one six-month period to the next, depending among other things upon the problems for which resolution is being sought and the type of operations available. Not all groups are interested in resolving the same problems nor are all groups capable at present of performing the same kinds of operations.

The authors have been particularly attracted to the infancy period since, according to postmortem data, 85 per cent of children with congenital heart disease die at less than two years of age, and it has been estimated that 50,000 infants are born each year with malformations that could be corrected in some 30 to 50 per cent of cases by present methods.

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Presented as part of a Symposium on Congenital Heart Disease before a Joint Meeting of the Sections on Radiology and Pediatrics at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

From the Department of Pediatrics, U.C.L.A. School of Medicine, Los Angeles 24.

Selective Angiocardiography in Congenital Heart Disease

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• **Angiocardiography has come to be a highly specialized procedure and there are definite indications for doing it. In specific cases it offers clear-cut advantages.**

Technical improvements permit a single injection of a small amount of contrast substance.

Selective angiocardiography is advised where the particular detail of a certain region in the heart is desired.

THERE ARE FEWER indications for angiocardiography today than was anticipated in the years before general use of this procedure had become an actuality. Many communications still make note of the limitations of the method and of the risk associated with it. Therefore, it is only in cases of real necessity that the procedure is carried out. As with other procedures entailing hazards of morbidity or mortality, the possible harm must be weighed against the benefits to be gained. Serious progressive heart disease with the exact diagnosis not known and the final issue in doubt presents a situation for such a decision. If a defect is suspected, information confirming the clinical diagnosis and providing anatomical orientation is important, for a surgeon then can use new surgical techniques with more confidence and better chance of benefit to the patient. The site and extent of defects, particularly of stenosis; the size, number, and location of septal defects; whether or not there is overriding of the aorta; and distinction of overriding aorta from high septal defects—all these can be fairly precisely determined by angiographic studies.

In general, techniques of angiocardiography as described by Robb and Steinberg in 1937 have not been greatly changed since then. Variations in the types of film changer, cassette changer, injector and other mechanical devices have made the results more predictable but have not made the procedure simpler. The authors have used the conventional venous angiocardiography in less than one-fifth of the cases studied. Selective angiocardiography, first described by Chavez in 1947, has proved better.

Since nearly all persons undergoing angiocardiography as a preliminary to operation must have cardiac catheterization as well, the authors have made catheterization an integral part of preoperative study. It is carried out essentially as described by Cournand in 1941. A local anesthetic is used at the point at which the vessel is opened for insertion of the catheter, and a basal anesthetic is added for children. After adequate data on the blood at various positions have been obtained and injection of opaque material is to be done, the tip of the catheter is placed near the structure about which information is desired. In most instances it is left in the apex or midportion of the right ventricle. A single high-speed injection of the opaque material selected (usually 70 per cent Urokon®) quickly fills the area around the catheter tip and usually promptly fills the pulmonary vessels and the entire ventricle, outlining the apertures within the ventricle. The quantity of material injected varies with the size of the patient and the size of the chamber which is to be filled. The speed of the injection varies with the quantity which must be injected, the size of the catheter, and the pressure placed upon it. A mechanical injector of the Gidlund type gives an injection rate which can fill a chamber within a half second. In general, it is desirable to complete the injection in less than two seconds. Such speed is necessary particularly in the demonstration of interatrial septal defects. It is not quite so important if the pulse rate is slow and the ventricular outlets are the subjects of study. In most cases the authors use an injection pressure of 3 kg. per cm.^{2},* but experimentally have used up to 10 kg. per cm.^{2} of pressure without manifest changes in intracardiac pressure or in the pulse rate or heart action where the quantities used were not greater than the volume of the heart chamber into which the material was injected. Using high density material in as small a quantity as can reasonably serve permits study of both ends of the opacified blood column as it moves to the various chambers of the heart.

There has been much comment recently about the relative merits of high-speed film changing and

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*3 kg. per square centimeter of area of cross-section of the lumen of the catheter.

Figure 1 (Case 1).—Coarctation of the aorta. *Left:* The aortic arch is seen in the left anterior oblique projection following injection of 40 cc. of 70 per cent Urokon into the superior vena cava. The length of the coarctation is seen here and in the simultaneous right anterior oblique projection *on the right.*

high-speed radiographic exposures. Each appears to have great advantage in certain circumstances, and both should be used in so far as possible. The shorter the exposure, of course, the better the detail obtained. The same is not necessarily true with regard to high speed changing of film or of cassettes, but it seems quite evident that since no one can know exactly when unusual events will take place within the heart, it is best to take many films in the hope of visualizing significant or characteristic changes. Thus cardiac functions are monitored not only by the roentgenograms obtained, but also by simultaneous electrocardiographic and respiratory curves on paper and on the oscilloscope in the room where the examination is taking place. As performed in the laboratory in which the authors work, selective angiocardiography is a highly cooperative procedure involving the synchronized efforts of nurse, technicians, anesthesiologists, cardiologists and radiologists. With this cooperative effort the accuracy of diagnosis has been better than 90 per cent and the incidence of complications slight. Transient arrhythmia, which was noted in about 30 per cent of the patients studied, was associated with the position of the catheter and the amount and type of medium injected. About one-fifth of the patients vomited. Nausea and vomiting are believed to have been contributory factors in the one case in which death occurred.

For purposes of illustration it might be well to report a case in which the angiocardiogram was normal. However there was no such case in the series of patients studied. The closest approximation was the following:

Case 1. The patient was a 27-year-old, white male postal clerk who had been a mail carrier until he switched to his present job because of fatigue. He weighed approximately 160 pounds. The blood pressure was 170/90 mm. of mercury in the right arm and 150/86 mm. in the left. In the lower extremities the systolic pressure was 140 mm. on the right and 124 mm. on the left. The diastolic pressure was over 100 mm. on both sides. Since birth the patient had had a systolic murmur over the precordium and down the back. No popliteal or femoral pulse was obtainable. A diagnosis of coarctation of the aorta had been made. The heart was slightly large. Angiocardiography was performed with a catheter in the superior vena cava. Forty cubic centimeters of 70 per cent Urokon was injected, and the films were exposed at a rate of 2 per second for 12 seconds. The right atrium filled promptly and well. Our first film disclosed the opaque bolus passing through the right ventricle into the pulmonary artery. A second film showed the initial filling of the left atrium and of the left ventricle. The third (Figure 1) delineated the aorta quite nicely, with the coarctation sharply delimited. It was noted that the constricted segment was short and that the obstruction was incomplete. No extensive collateral vessels were seen. The ana-

tomical situation of the various chambers and valves was quite normal. The dilution and mixing of the blood as it passed through the lungs was fairly limited. The contribution of the cavae, however, and the mixing in the ventricle necessitated the use of a larger amount of the opaque media than might otherwise be necessary.

Good delineation is also obtained in the left side of the heart by direct injection into the pulmonary artery.

CASE 2. An 11-month-old white girl weighing 8.4 kilograms had had heart failure several times since a severe episode of vomiting and anorexia at the age of three months. She had never been cyanotic or dyspneic. The heart was very large, and the enlargement was preponderantly left ventricular. A tentative diagnosis of fibroelastosis was made, but it was felt that an anomalous coronary artery orifice, with or without an interventricular defect, could cause the same general symptoms. Upon catheterization of the heart, normal data were obtained. Since the chief interest was in the left side of the heart and since the foramen ovale was not entered, the catheter was placed in the main pulmonary artery and 10 cc. of 70 per cent Urokon was injected at a pressure of 2 kg. per cm. squared.* Exposures in two planes at the rate of six per second for one second were obtained. Exposure number 4 demonstrated the filling of the pulmonary artery. Exposure number 5, one ventricular systolic contraction later, showed the washing out of the pulmonary artery by the unopacified blood from the right ventricle.

During the pulmonary phase of the circulation, two exposures per second for three seconds were obtained. Then during the left heart circulation, six exposures per second for two seconds were studied. Film number ten showed the filling of the left atrium and of the pulmonary veins. The mitral valve was visualized. One atrial contraction later, in atrial systole, the atrial shadow was smaller. The valve was no longer visualized, and the opacified bolus was passing into the left ventricle. The twenty-second exposure of this series again showed the atrium in diastole with sharp delimitation in the region of the mitral valve. The left atrial appendage was well filled and appeared to be much narrower than is usually noted. The left ventricle (Figure 2, *left*) was again seen to be large and had not changed in size and shape since the previous study. Exposure number 24 (Figure 2, *right*) again demonstrated the identical situation in the left ventricle—the atrium in systole, the mitral valve open and the atrium contracted. It appeared as if the opacified blood was being forced through the immobile left ventricle by this very active left atrium. The diagnosis was endocardial fibroelastosis.

An even clearer delineation of the left-sided structures may be obtained with a direct injection into the left side of the heart. This can be done either through a patent foramen ovale, through a septal defect, or by direct percutaneous puncture with a long needle after the manner of Bjork.

*See footnote on page 162.

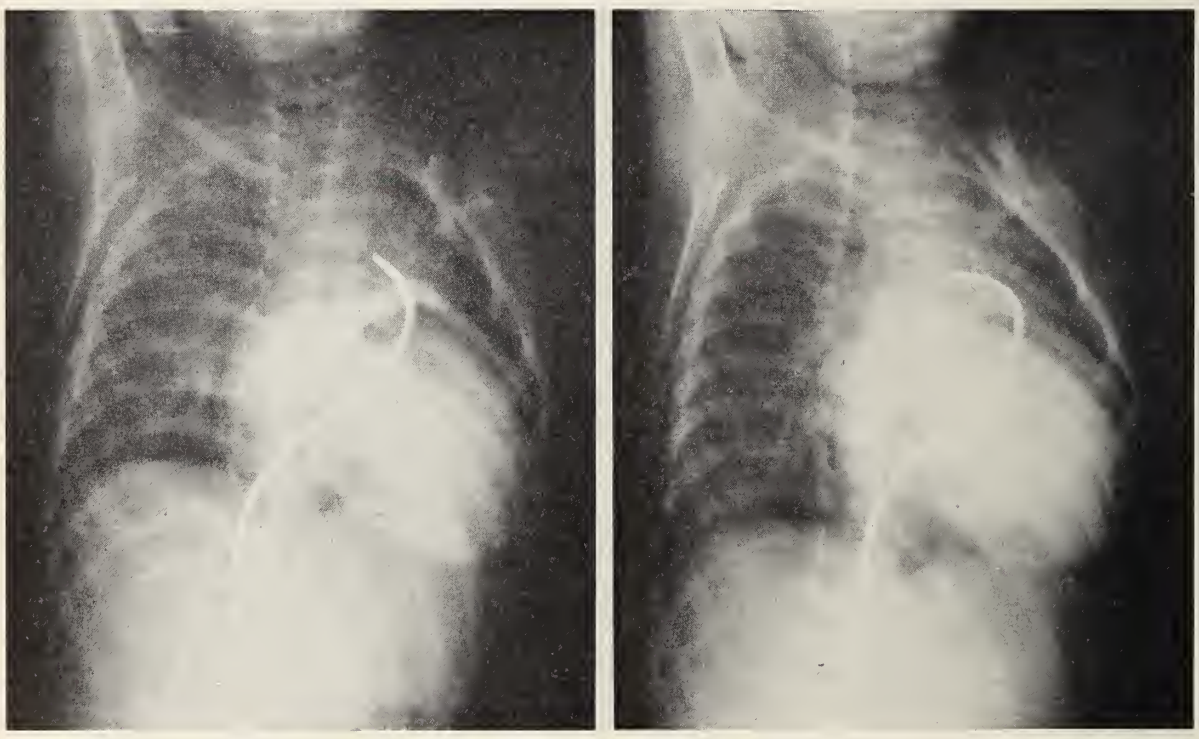

Figure 2 (Case 2).—Endocardial fibroelastosis. *Left:* The mitral valve is closed, the left atrium is filling. *Right:* Atrial contraction has filled the left ventricle, which has not itself changed in size.

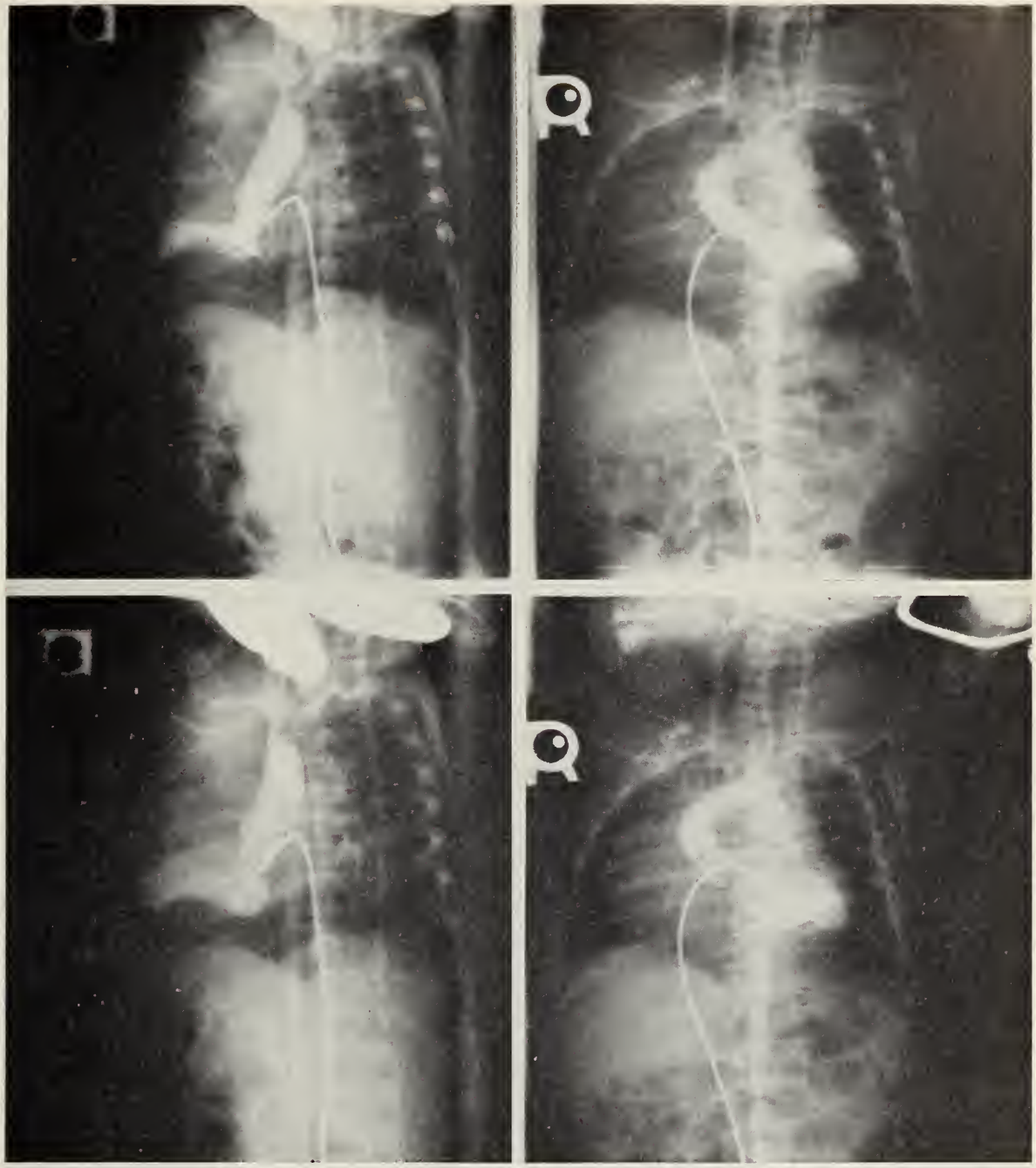

Figure 3 (Case 3).—Ebstein's anomaly with open foramen ovale. Simultaneous antero-posterior and lateral studies with catheter in the left ventricle. *Upper row:* Ventricular systole. *Lower row:* Ventricular diastole. Note the associated anomalies of the coronary arteries and of the subclavian-carotid complex.

Case 3. The patient, a white girl four months of age, weighing six kilograms, had been cyanotic since birth. She was dyspneic and had frequent respiratory tract infections. She had had a cold three days before admittance, and one ear was reddened. The diagnosis at the time of admittance was "transposition of the great vessels." In conventional x-ray films the right atrium and right ventricle were noted to be quite large. Cardiac catheterization revealed a generally low oxygenation, and the catheterization impression was that the patient had pulmonic stenosis and an interatrial septal defect. The catheter was left in what was thought to be the right ventricle. Ten cubic centimeters of 70 per cent Urokon was injected under pressure of 1.5 kg. per cm. squared,* and the exposures were made at six films per second in two planes. Eight ven-

*See footnote on page 162.

tricular ectopic beats occurred immediately after the injection, but the rhythm soon returned to normal. The child was returned to the ward apparently unaffected by the examination. Film No. 9 showed the position of the catheter quite different from its site at the time of the insertion. Apparently in moving the child the catheter had been passed through the foramen ovale into the left atrium near its mitral orifice. This exposure was with the heart in diastole; the aortic valves were closed, the aorta had already been filled and its anomalous branches were observed arising from the arch. No innominate artery was present, and the left subclavian arose from the descending aorta as did the right subclavian, the latter crossing behind the esophagus. The coronary artery was noted to be also anomalous, a single large trunk ascending from the sinus and branching into its three components. There was great difference between the diameter of this coronary artery in diastole and the diameter in systole (Figure 3). The patient died the following day, apparently of respiratory failure. At autopsy the right atrium and right ventricle were huge. The foramen ovale was patent; the tricuspid valve was anomalous. Medial cusps were absent. The anterior and inferior leaflets of the valve formed a membrane from the tricuspid ring to the anterior and lateral wall of the ventricle. A separate blind pouch was present with papillary muscles attached to both sides of this membrane. In effect, then, there was a single chamber on the right side. The ductus was closed. Aspirated food and milk was present in the tracheal bronchial tree.

Case 4. The patient, a five-year-old white boy, had been intermittently cyanotic since the age of six weeks. There was a history of squatting. A harsh systolic murmur with a thrill in the third interspace on the left was noted. A clinical diagnosis of infundibular stenosis was made, based chiefly on the cardiac configuration. Cardiac catheterization revealed evidence of both a right-to-left and left-to-right shunt as well as of right ventricular hypertension. The catheter could not be passed into the pulmonary artery and was left in the midportion of the right ventricle for subsequent angiocardiography. Although the patient weighed 17 kilograms, only 10 cc. of the opaque medium was injected. Exposures were made at a rate of 6 per second for three seconds and then 2 per second for six seconds in two planes. Before the first second (Figure 4) the injection revealed good filling of the right ventricle with enlargement of the crista supraventricularis and infundibular stenosis. A jet of opacified blood passed into the left ventricle. In ventricular diastole (Figure 5) this returned to the right ventricle with a jet of unopacified blood, and the infundibular chamber retained a moderate amount of the trapped opaque material. The pulmonary tree was well outlined and the valves beautifully demonstrated. The diagnosis was tetralogy of Fallot.

Case 5. The patient, a boy 20 months of age, had had numerous episodes of heart failure since the age of five months and had had many upper respiratory tract infections. Interventricular defect was considered, and cardiac catheterization was

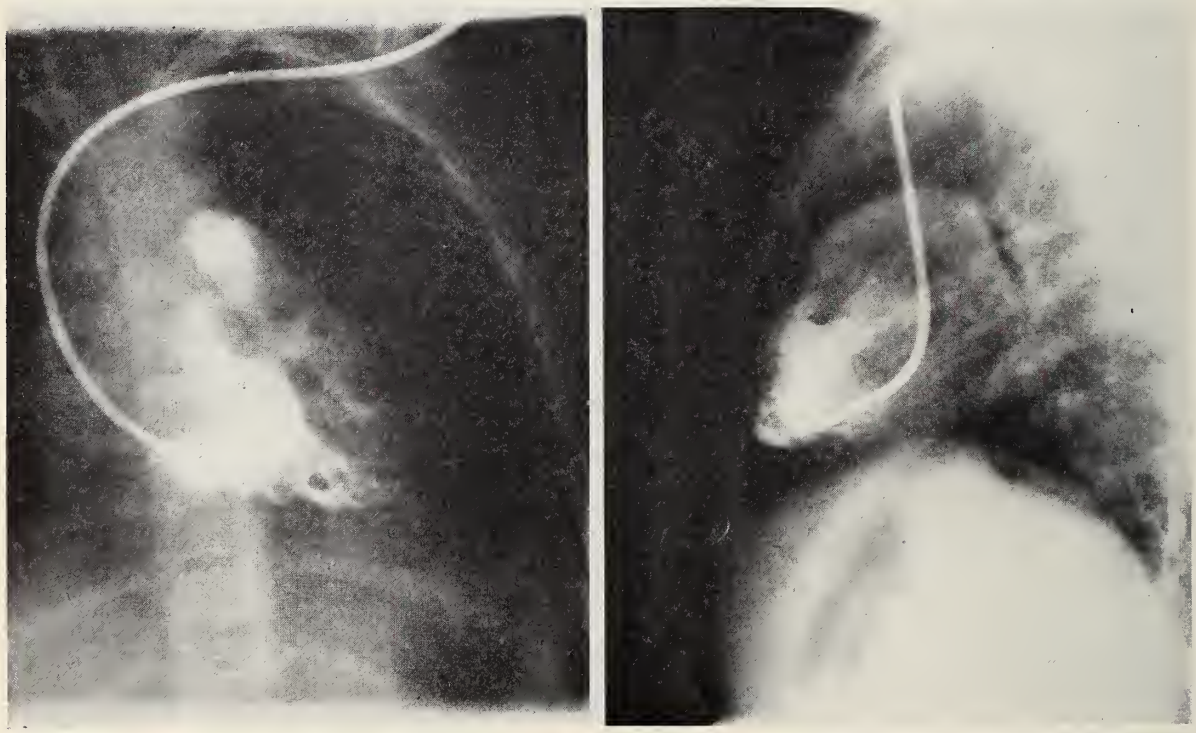

Figure 4 (Case 4).—Tetralogy of Fallot. Simultaneous exposures—large ventricular wall defect shown by transient reversal of shunt; catheter in right ventricle, pulmonic valves open.

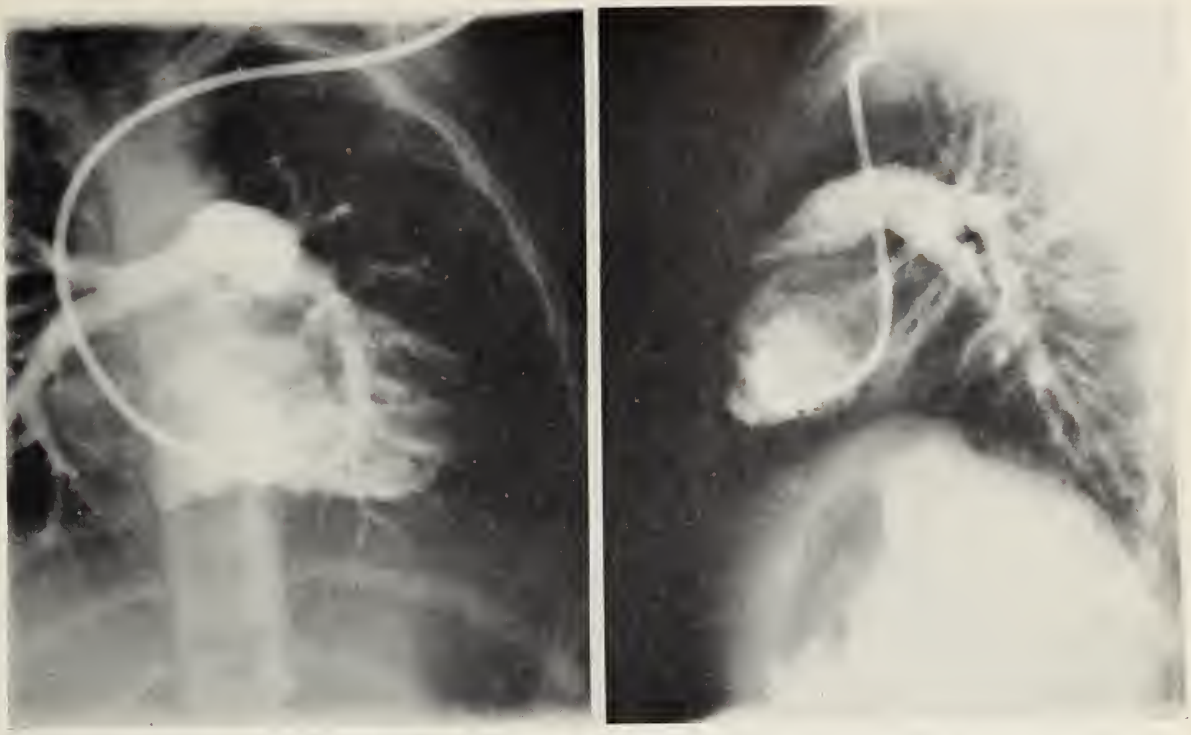

Figure 5 (Case 4).—Tetralogy of Fallot. Simultaneous exposures—pulmonary valves closed, one-tenth second later than Figure 4. Note the constant narrowing of the infundibulum of the right ventricle.

Figure 6 (Case 5).—Patent ductus arteriosus with coarctation of the aorta. *Left:* The aortic constriction is seen in the lateral projection at the attachment of the patent ductus arteriosus. Note the large pulmonary artery and its competent valves. *Right:* One-tenth second later the branch pulmonary arteries are well filled and the aortic collaterals are appearing.

carried out. This procedure demonstrated the probability of patent ductus arteriosus, possibly with reflux through the pulmonic valve into the pulmonary outflow tract. For angiocardiography, 8 cc. of 35 per cent Diodrast® was injected thereupon through a catheter in the left subclavian artery. At one-half second (Figure 6, *left*) the exposure showed not only the coarctation and the patent ductus arteriosus but also clearly demonstrated the distended pulmonary artery with its large competent valves. One-tenth of a second later (Figure 6, *right*) the pulmonary arteries extending out into the lung fields were well demonstrated and their relationship to the ductus arteriosus and the coarcted aorta was shown. Film No. 14, two seconds after the injection began, disclosed the retrograde flow of opacified blood from the internal mammary artery back to the distal portions of the aorta.* (It is tortuous vessels such as these that give rise to the intercostal pulse and the rib erosions which have become classical signs of coarctation of the aorta.)

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*For details of operation in this case, see paper by Maloney and Flynn on page 173 of this issue of CALIFORNIA MEDICINE.

For Your Patients—

A Personal Message to YOU:

As your personal physician I consider it both a privilege and a matter of duty to be available in case of an emergency. Consequently, I thought it would be a good precaution if—on this gummed paper which can be pasted in your telephone book or medicine cabinet—I listed the numbers where I can be reached at all times. They are:

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Sincerely,

_____, M.D.

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Retrograde Brachial Aortography

Its Use in the Diagnosis of Patent Ductus Arteriosus and Coarctation Of the Aorta in Infancy

HERBERT L. ABRAMS, *M.D.*, and SAUL J. ROBINSON, *M.D.*, San Francisco

• **Patent ductus arteriosus and coarctation of the aorta are among the commonest causes of congestive heart failure early in life. When medical therapy fails to control heart failure in these cases, surgical division of the ductus or excision of the coarcted segment can be performed. But the recognition of these anomalies in infancy is more difficult than in childhood or adult life.**

Retrograde thoracic aortography is a technique which permits positive identification. In the presence of patent ductus arteriosus, opacification of the pulmonary arteries from the descending aorta will be clearly shown; if coarctation is present, its position, severity, and the length of the involved segment can usually be demonstrated. Properly employed, retrograde brachial aortography is a relatively safe and effective diagnostic procedure.

PATENT DUCTUS ARTERIOSUS and coarctation of the aorta are among the commonest causes of congestive heart failure in early life.[2-4,6,8] When intractable under medical management, both are amenable to surgical treatment. With modern methods both are diagnosable, yet occasionally are not recognized in time.

In infancy, the ordinary clinical and roentgenologic signs may not suffice for exact diagnosis. Patent ductus arteriosus may exist without the classical "machinery" murmur, and may be difficult to differentiate from intracardiac left-to-right shunts. The diagnosis of coarctation of the aorta, usually clear-cut in adults on clinical grounds alone, is less certain in infants, in whom blood pressure measurements may be difficult to obtain. Even when the diagnosis can be made, the length and position of the stenotic segment may affect the feasibility of operation.

Retrograde brachial aortography is an efficient diagnostic technique in such infants.

Technique

The left brachial artery is cannulated (Figure 1) and the opaque medium is injected counter-current toward the aorta. Serial roentgenograms record the passage of the opaque medium into the aortic arch and its branches (see Figure 1). (Details of premedication, anesthesia and electrocardiographic recordings, were described in a previous communication.)

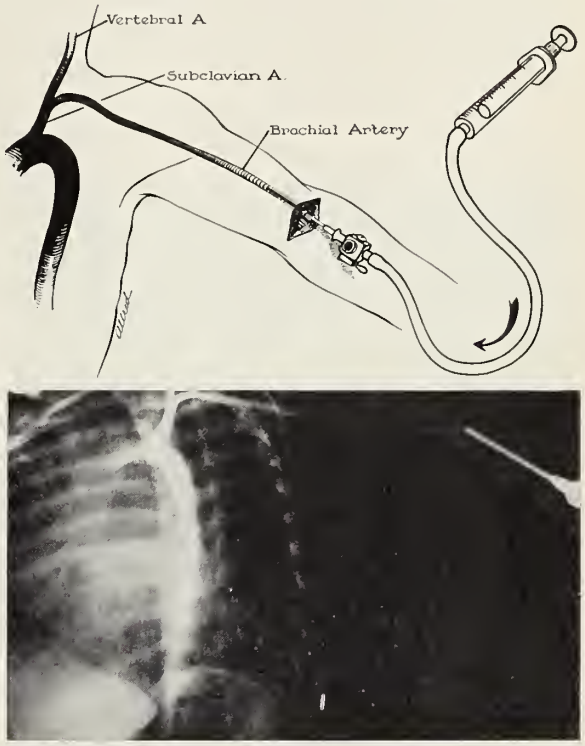

Figure 1.—Technique of retrograde brachial aortography. *Upper:* The largest possible Robb needle is inserted in the brachial artery and attached to a three way stop-cock. A short length of flexible rubber tubing is attached to the stop-cock at one end, and the filled syringe at the other. *Lower:* Roentgenogram following injection. The needle is in the left brachial artery, and the injection has just been completed. The brachial, axillary and subclavian arteries are opacified, as is the arch of the aorta and the descending thoracic aorta.

Material

Retrograde aortograms were performed in 84 patients, 67 of them less than three years old, 50 less than 12 months, and 32 less than six months. Thirty-five per cent Diodrast® was injected into the brachial artery in 77 cases, and a 70 per cent to 75

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TABLE 1.—*Findings in 84 Retrograde Thoracic Aortograms*

Diagnosis	No. of Cases
Patent ductus arteriosus	14
Coarctation of the aorta	15
Total interruption of aortic arch	1
Right aortic arch with retroesophageal aortic diverticulum	1
Right aortic arch	1
Reverse patent ductus arteriosus*	2
Normal	44
Unsatisfactory	6
Total	84

*Angiocardiograms were required to demonstrate reversal of flow. In an additional two cases in which coarctation of the aorta was present, reversal of flow through a patent ductus arteriosus was also demonstrated.

per cent concentration of the opaque medium into the carotid or brachial artery in seven cases. The indication for the procedure in most cases was persistent congestive heart failure, frequently associated with recurring pulmonary infection. The primary effort was to ascertain whether patent ductus arteriosus or coarctation of the aorta was present.

Results (Table 1)

In 14 cases, the presence of patent ductus arteriosus with left-to-right shunt was shown either by demonstration of the ductus itself (Figure 2) or by indirect evidence—immediate opacification of the pulmonary arteries from the descending limb of the aortic arch (Figure 3). Within two to three seconds after injection, left atrial, left ventricular and subsequent aortic opacification were observed. Eleven of the 14 patients were below the age of one year. In all instances but one, the diagnosis was proved at operation.

The presence of coarctation of the aorta was demonstrated in 15 patients. In most instances the site of coarctation was distal to the origin of the left subclavian artery, and the zone of constriction was localized (Figures 4 and 5). In ten cases the diagnosis was proved at operation and in two at necropsy. Ten of the 15 patients were below the age of one year.

In one case, complete interruption of the aortic arch, associated with reversed flow through the ductus arteriosus was shown. In another case, a retroesophageal aortic diverticulum was opacified.

Forty-four studies were normal, and six examinations were unsatisfactory.

There were three errors in diagnosis, all of them included in the six cases in which the studies were unsatisfactory. In one, the diagnosis of patent ductus arteriosus was suggested and proved wrong; in another, the result of examination was interpreted as negative for ductus and a ductus was subsequently proved to be present; and in the third case it was stated that there was "suggestive but incon-

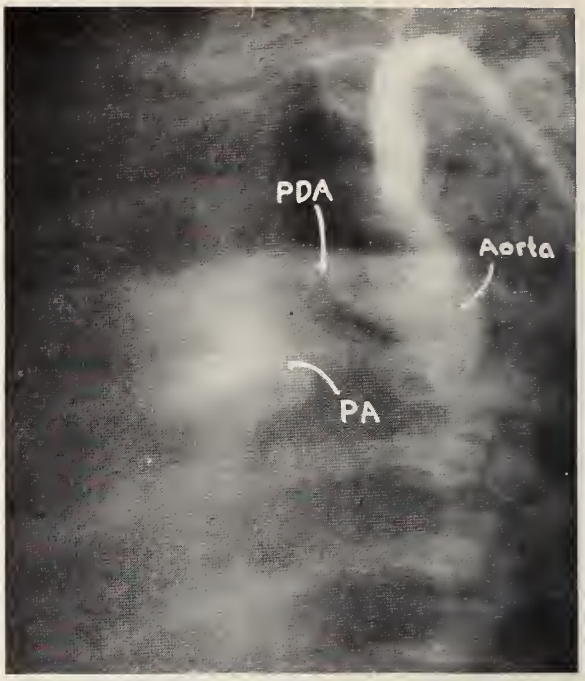

Figure 2.—Patent ductus arteriosus in a seven-month-old girl. Retrograde brachial aortogram. The opaque medium has reached the aorta from the subclavian artery, and clearly delineates the ductus arteriosus (PDA). The pulmonary artery (PA) is opacified because of the left to right shunt through the ductus.

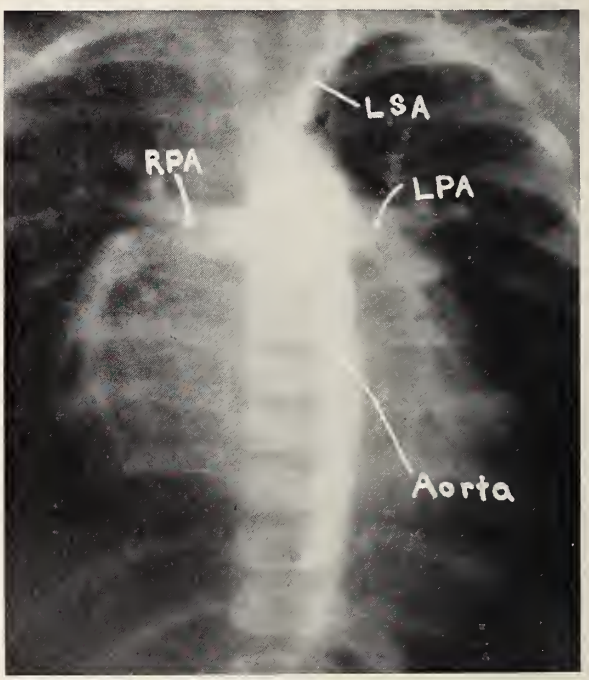

Figure 3.—Patent ductus arteriosus in an eight-month-old girl. Retrograde brachial aortogram demonstrates sequential opacification of the left subclavian artery (LSA), the aorta, and the right (RPA) and left (LPA) main pulmonary arteries, proving the existence of an aortic pulmonary communication. That this is a patent ductus arteriosus rather than an aortic septal defect may be inferred from the fact that the ascending aorta is not opacified.

clusive" evidence of a patent ductus arteriosus and no ductus was found at operation. All three of these studies would now be considered unsatisfactory and a repeat examination would be done.

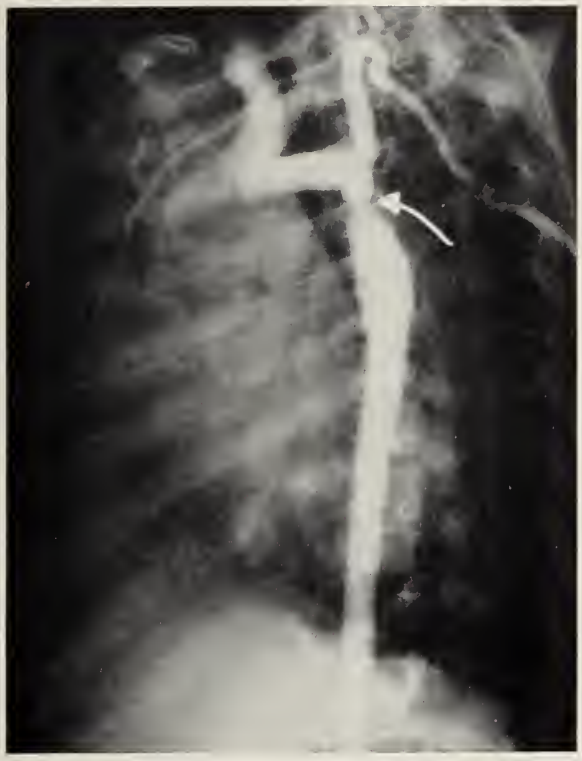

Figure 4.—Coarctation of the aorta in a three-month-old boy. Retrograde brachial aortogram. The classical "adult" (localized) type of coarctation is visible. The ascending aorta is somewhat dilated, in contrast to the transverse portion of the arch and the isthmus. Note the large tortuous parascapular artery. The internal mammary arteries are also prominent.

TABLE 2.—*Reactions Following Retrograde Aortography with 35 Per Cent Diodrast in 77 Cases*

Reactions	No. of Patients
Irregular, labored, or rapid respirations	8
Vomiting (all patients had general anesthesia)	6
Slight tremor	1
Disparity in pupil size	1
*Electrocardiographic changes:	
T-wave changes	4
Ventricular premature beats	2
Nodal rhythm	1
Tachycardia	3

*Electrocardiograms were obtained in only 35 of the cases.

Reactions

Among the 75 cases in which retrograde aortograms were performed, using brachial injection of 35 per cent Diodrast as the medium, the incidence of significant reactions was not high and there were no deaths (Table 2).

In seven instances retrograde brachial carotid injection with a 70 per cent to 75 per cent concentration of opaque medium was employed. Reactions in these cases are listed in Table 3.

Most of the deaths reported in the literature followed the use of a 70 per cent medium or injection into the carotid artery.[5,7,9] Since a 30 to 35 per cent concentration of opaque medium is adequate for demonstrating the aorta in infancy, no higher concentration need be employed.

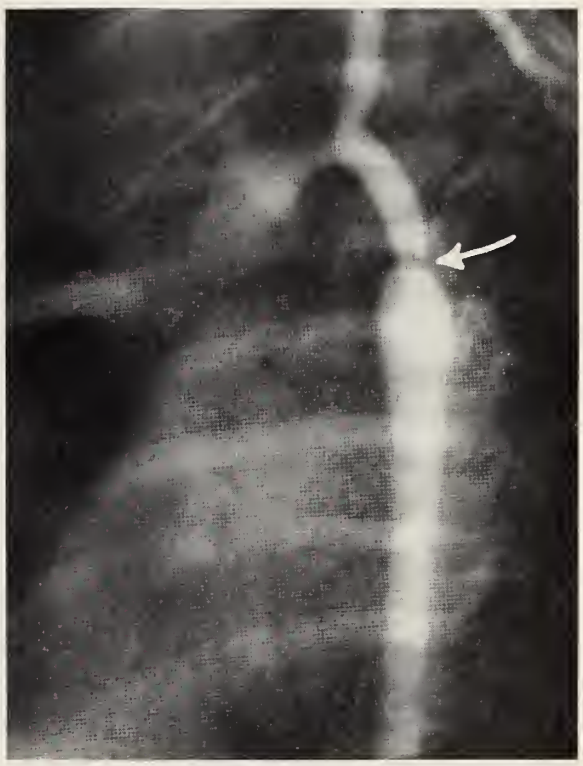

Figure 5.—Coarctation of the aorta in a two-month-old infant. Retrograde brachial aortogram demonstrates a localized zone of stenosis (arrow) at the termination of the isthmus of the aortic arch. Beyond this area of narrowing, a distinct poststenotic dilatation involving a segment about 1.5 cm. is visible.

TABLE 3.—*Reactions Following Retrograde Aortography in Which a 70 Per Cent Concentration of Medium Was Used in Seven Cases*

Patient No.	Medium	Concentration	Site of Injection	Reaction
1	Urokon	70 per cent	Brachial artery	Death
2	Diodrast	70 per cent	Carotid artery	Laryngospasm
3	Diodrast	70 per cent	Carotid artery	Hemiplegia
4	Neo-Iopax	75 per cent	Carotid artery	Severe neck pain
5-7	Diodrast	70 per cent	Carotid artery	None

DISCUSSION

All the patients with patent ductus arteriosus had an excellent response to closure of the ductus. Most of the patients with coarctation were relieved of heart failure and of significant disability. Since special diagnostic procedures were employed only on patients who were severely ill, operation was not without hazard; but the prognosis with medical management seemed grave.

The diagnosis of patent ductus arteriosus may be made in infancy by cardiac catheterization. If the pulmonary artery is not catheterized, the diagnosis cannot definitely be established. Furthermore, even if the pulmonary artery is catheterized, the distinction of patent ductus arteriosus from ventricular septal defect is not always possible unless the ductus itself is entered. In the largest published series of catheterizations in infancy, failure to enter the pulmonary artery was relatively common in patients under the age of 12 months.[11] Hence the authors have relied on aortography in infancy and have reserved cardiac catheterization for older age groups. Obviously, the main objective is to establish the diagnosis of an operable anomaly, and to this end both techniques may be effectively utilized.

The hazards of retrograde aortography have frequently been stressed. The authors' experience with the retrograde brachial infection of 35 per cent Diodrast has been fortunate, but not unique.[8] A survey is under way to determine the hazards of retrograde aortography as employed at a large number of institutions. Preliminary analysis suggests that the complications of retrograde aortography have usually been most striking when high concentrations of the opaque media have been injected into the carotid artery.

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Surgical Treatment of Congenital Heart Disease

The Evaluation of Diagnostic Data

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• **In the diagnosis of congenital heart disease, the cardiologist was formerly concerned with distinguishing the operable from the inoperable cases. With the development of "open" heart operations under hypothermia and extracorporeal circulation, the majority of congenital heart lesions have become correctable. It is now necessary to make an exact anatomic diagnosis preoperatively. The present discussion reviews the diagnostic methods employed by the cardiac team in investigating a patient with congenital heart disease.**

THE TASK OF THE CARDIOLOGIST in diagnosing congenital heart disease was, until recently, a relatively simple one. It consisted of separating those cases for which a satisfactory operation had been developed from other cases for which no known treatment was available. The perfection of the technique of "open" heart operations—that is, operations in which the surgical field is exposed to vision—with the aid of hypothermia or pump-oxygenators makes imperative the specific diagnosis of all congenital heart lesions, since most can be satisfactorily treated by surgical methods now available. The purpose of the present discussion is to emphasize the surgeon's need of an accurate preoperative diagnosis, since his surgical approach is determined by the nature and location of the congenital lesion.

Five years ago, it was of academic interest to differentiate a functional cardiac murmur from one due to atrial or ventricular septal defects, for the course of action to be followed in either case was the same. Now, however, approximately 70 per cent of patients with congenital heart disease can benefit from operation and the physician therefore has an increased obligation to arrive at an accurate diagnosis. It is desirable that the nature of the lesion be determined at an early age, since in some patients, particularly those with increased pulmonary flow, severe pulmonary hypertension may develop if the disease is allowed to progress, and operation then could not be done.

The diagnostic problem from the surgeon's point of view has become more complex. In former years it was only necesary for him to know whether the operation would best be performed through the right or left hemithorax. In general, this could be determined by the nature of the diagnosis and by study of the structure of the great vessels. Newly developed surgical techniques give surgeons a choice between shunting operations and direct operation on the cardiac lesion; between "closed" operation (the surgeon operating within the heart on structures not exposed to view) and "open" operation (under direct vision); between open operation under hypothermia (with the circulation obstructed after the body temperature is lowered) and open operation with the pump-oxygenator (with the heart totally by-passed). Use of these new methods of open heart operation requires hours or days of preoperative preparation. It is not sufficient that the surgeon arrive at a diagnosis at the time of operation, since, for example, the discovery of a ventricular defect at the time of operation would require reoperation when a pump-oxygenator could be prepared for use.

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DIAGNOSTIC METHODS

Many cases of congenital heart disease are satisfactorily diagnosed simply on the basis of information ordinarily available—history, physical examination and radiologic and electrocardiographic data. The more difficult diagnostic problems may require study by special tests such as cardiac catheterization and angiocardiography. A brief review of the various diagnostic aids is pertinent.

History

In addition to the usual signs and symptoms of cardiac disease—retarded development, cyanosis, syncopal attacks and dyspnea—there may be other indications pointing to a specific diagnosis. Repeated respiratory tract infection suggests the presence of increased pulmonary blood flow due to a left-to-right shunt within the ventricles or between the great vessels. A shunt in the opposite direction

(right-to-left) is often associated with a history of cyanosis after slight exertion. If the patient squats in a characteristic fashion after exercise, the presence of pulmonic stenosis, in addition to the right-to-left shunt, is probable. Hemoptysis suggests pulmonary hypertension and may occur with either elevation of the pulmonary venous pressure or pulmonary arterial pressure. Dyspnea on slight exertion in a noncyanotic child should make the physician suspect isolated valvular pulmonic stenosis.

Physical Examination

Physical examination of the patient in some diseases, such as patent ductus arteriosus and coarctation, may be sufficient to establish the diagnosis. However, the results of physical examination are more often confirmatory in nature and must be used in conjunction with other clinical and special tests. A bulge in the left anterior wall of the chest in a noncyanotic child may indicate right ventricular hypertrophy and often gives the first evidence of a left-to-right shunt. The timing and the location of thrills and murmurs give important information. Exaggeration of the intensity of the pulmonary second sound and mitral first sound frequently results from pulmonary hypertension and elevated pulmonary venous pressure respectively, although such observations must often be confirmed by direct measurements. Inequality of peripheral pulses may result from anomalies of the aortic arch or from coarctation. The presence of cyanosis and clubbing of the extremities is of interest but permits a specific diagnosis only in cases in which it is present in the lower extremities and absent in the upper (*i.e.*, patent ductus arteriosus with a reversed shunt).

Growth is retarded in the majority of patients with tetralogy of Fallot, ventricular septal defect, patent ductus arteriosus or transposition of the great vessels. Physical development is retarded in the minority of patients having tricuspid atresia and atrial septal defect. It is generally normal in coarctation, isolated valvular pulmonic stenosis and congenital aortic and subaortic stenosis. Impairment of development, however, is more often correlated with the degree of intracardiac shunt than with the specific diagnosis.[1]

Radiology

Postero-anterior and right and left oblique views of the chest, particularly when done with a barium swallow, are helpful in determining enlargement of cardiac chambers. Stenotic valves can often be identified by the poststenotic dilatation of the artery beyond. Enlargement of the pulmonary artery and congestion of the lung fields indicate increased pulmonary flow and a left-to-right shunt. Fluoroscopic visualization gives a more dynamic picture of cardiac function; abnormal pulsations in the auricles sometimes signify insufficiency of the right or left atrioventricular valves. Since congenital heart lesions are frequently associated with anomalies of the great vessels, careful inspection for such anomalies should be made at the time of fluoroscopic examination. Urgency for surgical treatment is often indicated by progressive cardiac enlargement visible on films taken at intervals over a period of months or years.

Electrocardiography

The determination of electrical axis and right and left ventricular hypertrophy provides helpful ancillary information. Left axis deviation in a cyanotic child is pathognomonic of tricuspid atresia. Rarely, however, is the electrocardiogram of such specific diagnostic aid.

Cardiac Catheterization

The introduction of a catheter into the chambers of the heart by way of the venous system is one of the most helpful of the special diagnostic tests. The information gained frequently leads to a specific diagnosis. Pressure tracings may identify pulmonary hypertension and insufficiency or stenosis of the tricuspid or pulmonary valves. Contamination of the normally desaturated venous blood on the right side of the heart by fully oxygenated blood from the left side makes possible the diagnosis of a left-to-right shunt. Depending on the location of the "step-up" in oxygen saturation, one may make the diagnosis of an atrial or ventricular septal defect or patent ductus arteriosus. Right-to-left shunts may be identified by the presence of arterial desaturation on samples withdrawn from a peripheral artery. Significant information is obtained by passing the catheter directly through a defect in the heart or great vessels. Thus, the diagnosis of atrial or ventricular septal defects or patent ductus arteriosus is established when the catheter enters the left side of the circulation (Table 1).

Angiocardiography

If the nature of the lesion remains in question after the performance of the preceding studies, angiocardiographic examinations may complete the diagnostic study. The introduction of the radiopaque dye into the venous system frequently shows the presence of intracardiac shunts and permits an outline of the anatomic structure of the right and left chambers of the heart. The development of new x-ray machines permits exposure at motion picture speed, thereby giving the physician an opportunity to study the function of the heart valves during the cardiac cycle. (A detailed discussion of this technique is presented in another paper in this symposium—page 162.

TABLE 1.—*Catheterization Data in Common Congenital Heart Defects*

Congenital Defect	Shunts	Pressures (in Mm. of Mercury)			Oxygen Content		
		RA	RV	PA	RA	RV	PA
Normal	.....	5/0	25/0-2	25/8	VC=RA	RA=RV	RV=PA
Patent ductus arteriosus	Left to right	Normal	Normal or Increased	Normal or Increased	Normal	RV=RA or RV>RA	PA>RV
Tetralogy of Fallot	Right to left	Normal	Increased	Decreased	Normal	RV=RA or RV>RA	PA=RV
Auricular septal defect	Left to right	Normal or Increased	Increased	Increased	RA>VC	RV=RA	PA=RV
Ventricular septal defect	Left to right	Normal	Increased	Increased	Normal	RV>RA	PA=RV
Pure pulmonic stenosis	None	Normal	Increased	Decreased	Normal	RV=RA	PA=RV
ASD and VSD	Left to right	Increased	Increased	Increased	RA>VC	RV>RA	PA=RV

Abbreviations:
ASD = Auricular septal defect
VSD = Ventricular septal defect
RA = Right atrium
RV = Right ventricle
PA = Pulmonary artery
VC = Venae cavae

OPEN HEART OPERATIONS—EFFECT ON DIAGNOSIS

In the early days of cardiac operations, many or all of the previously mentioned special studies were performed in each case before operation. Such an extensive work-up sometimes reflected the limitation of the physician's ability to make a clinical diagnosis. Evaluation of patients on clinical criteria during the past eight years reached a sufficient degree of perfection that many of these tests became unnecessary in the average case. During this era the identification of a correctable lesion was adequate indication for operation. The surgeon was little concerned with the presence of additional anomalies, since such associated defects were beyond his ability to correct. Now, however, the development of open heart operations under hypothermia or extracorporeal circulation has increased the necessity of obtaining a complete diagnosis before operation. Multiple defects may now be corrected at a single operation, but it is essential that the surgeon be apprised of all abnormalities before operation so he can select the appropriate method of approach. For example, isolated pulmonic stenosis can be satisfactorily corrected by closed operation through a left thoracotomy. If the valvular stenosis were associated with a large atrial septal defect, the surgeon might elect to repair both lesions by open cardiac operation, with the aid of hypothermia, through a bilateral thoracotomy.

THE CARDIAC TEAM

The complexity of cardiac diagnosis has so increased that rarely is one person capable of understanding completely all aspects of the problem. This has resulted in the development of one of the most helpful adjuncts in the treatment of patients with congenital heart disease—the cardiac team. Following completion of the diagnostic studies in an individual case, a meeting of interested physicians—a pediatric cardiologist, a radiologist, a physiologist and a surgeon—is called. All aspects of the diagnosis, prognosis and treatment are discussed. As the result of these conferences the surgeon is able to select the method of operation which will most benefit the patient.

Despite intensive preoperative investigation, the surgeon is sometimes faced with totally unanticipated problems in the operating room. It has been found valuable to have a consultation of the cardiac team in the operating room when unexpected anomalies are encountered after the chest is opened. By visual inspection and palpation of the heart, the surgeon is often able to obtain additional information. Probes inserted through the ventricular wall may be used to locate septal defects. Exploratory myocardotomy may be performed so that the surgeon may palpate the structure and function of the cardiac valves. Pressure measurements and the withdrawal of blood for oxygen analysis during operation may also be useful. Diagnoses made at operation are of less value than those made preoperatively, since the surgeon may be unprepared to perform an open heart operation requiring the use of hypothermia or of a pump-oxygenator.

ILLUSTRATIVE CASE

The following report of a case illustrates the use of clinical and special tests for arriving at a correct diagnosis in a patient with multiple cardiovascular defects.

A 21-month-old white boy was admitted to the hospital for diagnostic study. Cardiomegaly and a murmur were first noted at the age of two months. During the first six months of life the child had

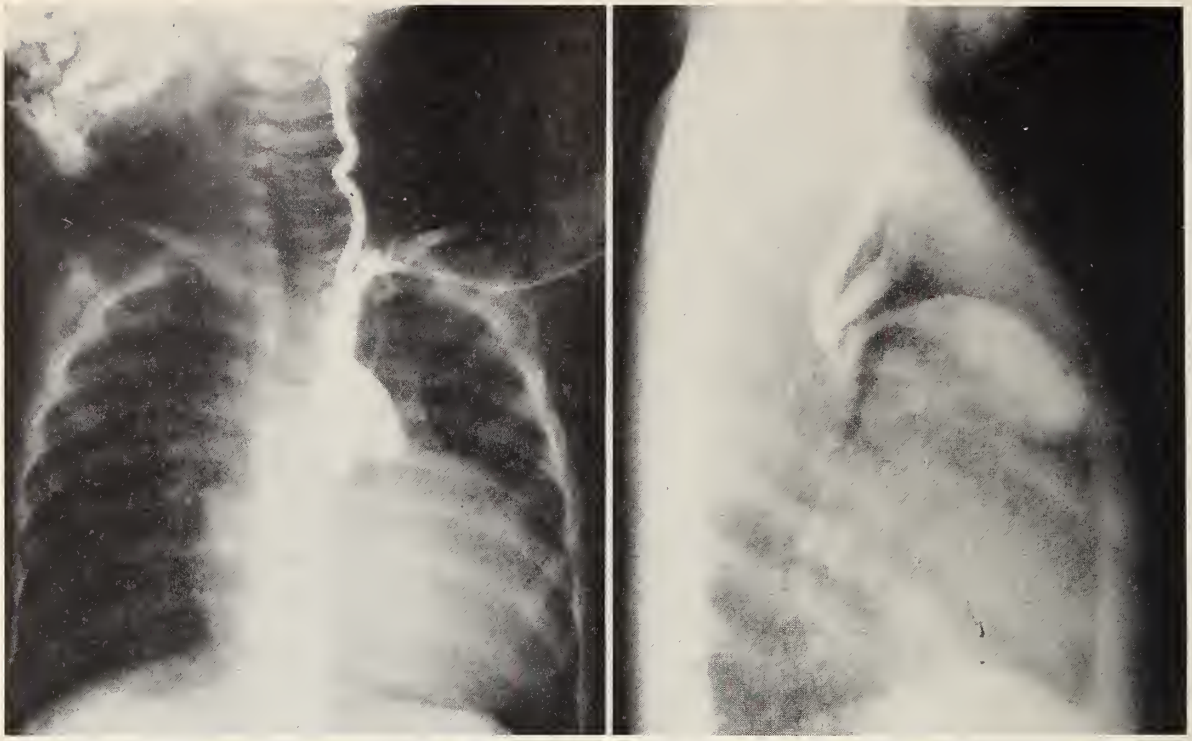

Figure 1.—Retrograde aortogram. Note catheter in left subclavian artery with dye filling the descending aorta and refluxing through the patent ductus into the pulmonary artery and demonstrating the competency of the closed pulmonic valves.

three episodes of cardiac failure treated by hospitalization and digitalization. There was a history of frequent upper respiratory tract infection. Cardiomegaly had been progressive up to the time of admission.

The patient was physically retarded. He was tachypneic at rest and decidedly dyspneic on exertion. There was no cyanosis. The heart was enlarged, and there was a Grade IV systolic murmur, loudest in the third interspace along the left sternal border. This murmur was transmitted posteriorly to the interscapular area. One observer heard a short middiastolic murmur at the apex; another observer noted a continuous murmur at the base. The pulmonary second sound was accentuated. The blood pressure was 160/60 mm. of mercury in the left arm and 80/60 mm. in the left leg. Femoral pulses were faintly palpable.

The difference in blood pressure between the arms and legs made the diagnosis of coarctation a certainty. Coarctation as an isolated defect, however, does not commonly cause heart failure at an early age. The history of repeated respiratory infections and an exaggeration of the pulmonary second sound on physical examination suggested increased pulmonary blood flow indicative of a left-to-right shunt (septal defect or patent ductus arteriosus).

Radiological examination demonstrated right and left ventricular hypertrophy and increased vascularity of the lung fields. An electrocardiogram showed right axis deviation and right ventricular hypertrophy.

The clinical tests were of little diagnostic aid, and it was apparent that cardiac catheterization would be necessary to detect the presence of malformations in addition to the coarctation.

Cardiac catheterization data was as follows:

	Pressure (mm. Mercury)	Oxygen Saturation (Per Cent)
Right atrium (high)	3/0	67
Right atrium (mid)		67
Right atrium (low)		66
Right ventricle (high)	50/4	80
Right ventricle (mid)	54/8	75
Main pulmonary artery	77/60	88
Right pulmonary artery	53/33	80
Aorta, below diaphragm (through a patent ductus)	40/20	95
Left subclavian artery	145/58	92

The catheterization studies confirmed the presence of patent ductus arteriosus by the direct passage of the catheter through the ductus into the aorta. The measurement of intra-arterial pressures, above and below the site of coarctation, further confirmed the diagnosis of coarctation. The "step-up" in oxygen saturation in the right ventricle suggested either of two possibilities: (1) That an interventricular defect was present, or (2) that the pulmonary hypertension caused by the patent ductus resulted in insufficiency of the pulmonary valves

with leakage of saturated blood back into the right ventricle.

Retrograde aortography was carried out by passing a plastic catheter up the left ulnar artery until the tip of the catheter lay just within the aortic lumen. Rapid sequence radiograms were made during injection of the dye. Dye passed from the aorta into the pulmonary artery through the patent ductus. Good filling of the main pulmonary artery demonstrated the pulmonary valves to be competent (Figure 1).

Since the angiogram demonstrated competency of the pulmonary valves, the step-up in oxygen saturation in the right ventricle was considered due to an interventricular defect.

Final diagnosis was, therefore, coarctation with patent ductus arteriosus and interventricular septal defect. Because of the extent of the operation for coarctation, it was elected to close the ductus and repair the coarctation but to leave the repair of the ventricular septal defect for a second operation. The patient has recovered satisfactorily from the first operation.

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As your personal physician I consider it both a privilege and a matter of duty to be available in case of an emergency. But, being only human you can understand that there are times when I may not be on call. I might be at a medical meeting outside the city, on a bit of a vacation—or even ill.

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Neurology, Neurosurgery and Psychiatry

KNOX H. FINLEY, *M.D.*, San Francisco

• **Neurology, neurosurgery and psychiatry over the past few decades have become more and more segregated in spite of their common foundation in the basic sciences of neuroanatomy, physiology, neurophysiology and neurochemistry. The reasons leading to this unhealthy dichotomy or trichotomy of these specialties dealing with disorders of the nervous system (including behavior) are discussed. Recent advances in the neurobiological sciences are reviewed from the point of view of encouraging and justifying a more healthy integration and working together of these three closely related specialties.**

MAGOUN at the recent meeting of the Medical Advisory Board of Cerebral Palsy in Santa Monica stated in an informal discussion, "We need an approximation of the brain and mind." Clinically, this is to say we need an approximation of neurology, including neurosurgery, and psychiatry.

The artificial dichotomy of neurology and psychiatry has been due mainly to: (1) A lack of knowledge of the more complex functions and interactions of the higher levels of the neuraxis, and (2) a lack of appreciation or failure of application of this appreciation that the nervous system is the only organ of the body whose function, among other functions, is concerned, in the terms of Herrick[5] "with the interaction between the living body and the world about." Neurology rooted to the limited knowledge of the structure and function of the nervous systems, has avoided behavioral and environmental problems of health because: (1) It could not correlate complex human behavior with the limited knowledge of the nervous system, and (2) it failed to appreciate or apply its appreciation that one of the important functions of the nervous system is concerned with the interaction between the living body and the world about. There were neurologists with more social, theoretical and philosophical interests who turned to the problem of unhealthy human behavior. However, for the same reasons the more socially minded and philosophical neurologist, the anlage of the present day psychiatrist, was unable to correlate his interests in human behavior to the then limited knowledge of the complex neuronal systems of the neuraxis.

Therefore, ignorance of the anatomical and physiological understanding of the higher levels of the neuraxis has led to isolationism between neurology, neurosurgery and psychiatry. In recent decades there has resulted a breaking apart of medical societies of neurology and psychiatry whose membership was made up of neurologists, neurosurgeons and psychiatrists into segmented societies of neurology, neurosurgery, or neurology and neurosurgery and psychiatry. A few of the older and broader traditional societies have withstood the isolationist trends—such as the Boston Society of Neurology and Psychiatry, the Northwest Society of Neurology and Psychiatry, and our own Section on Psychiatry and Neurology of the California Medical Association. Today, so far as the author knows, there is in existence only one society on a national or international level which brings together neurologist, neurosurgeon and psychiatrist: It is the Association for Research in Nervous and Mental Diseases.

There was a time when most medical schools had a department of nervous and mental diseases. In this country, such departments have become almost nonexistent. Understandably the neurosurgeon, because of his special treatment technique, became a part of the department of surgery. However, the philosophy of dichotomy of the organic and functional causes of nervous and mental diseases has split the residual departments of nervous and mental diseases into separate divisions of neurology and psychiatry. Neurosurgery, through its remaining ever close to general surgery, has held to the stable and healthy traditions of medicine. Neurology, because of its continued ties to the basic sciences of its specialty—anatomy and physiology of the nervous system—has likewise been prevented from loosening its roots from medicine although its limbs have been pruned back, because several of the neurological disorders were lost to new medical and surgical therapeutic procedures.

Psychiatry, in its correct appreciation of the great need of medicine to accept the responsibility for the better understanding and treatment of unhealthy human behavior, took on the challenge. But after the acceptance of the challenge, lack of knowledge prevented relating the symptoms and signs of behavioral disorders to the basic sciences of medicine, in particular neuroanatomy and physiology. Freud himself is a case in point. It is known that Freud was well grounded in the basic sciences of the ner-

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vous system, including neuropathology and clinical neurology. He developed a strong interest in behavior problems. With this interest he recognized that the neuroanatomy and physiology as known in his time had little to contribute to the understanding and treatment of the neuroses and psychoses. It is clear that he was aware of the potential importance of the neurobiological sciences to behavioral disorders.

Following are a few of many examples of this from Freud's "General Introduction to Psychoanalysis."[3] In referring to a psychiatric clinical picture. he said that such psychic disturbances are open to therapeutic influence only when they can be identified as secondary phenomena of an otherwise organic affection. He referred to excitement. absentmindedness and distracted attention as cycle physiological moments. In his chapter on the psychology of errors: "It will depend on whether the specific psychic manifestations resulted directly from bodily organic material influences. in which case their investigation will not fall within the province of psychology, or whether it was more immediately the result of other psychic occurrences back of which, somewhere, the series of organic influences then began." Yet he made many statements which led his less well neurologically trained disciples to radically isolate psychiatry from its wholesome, traditional, medical roots. For example, Freud wrote. "To this end it [psychoanalysis] must enforce itself on every anatomical, chemical, or physiological supposition which is alien to it."

If his more vocal disciples had had Freud's grounding in the basic sciences and clinical fields of neurology. they would not have gone as far afield from the boundaries of sound traditional medicine. Also, if there had been in Freud's time the knowledge of the higher centers of the neuraxis which we have today. it is doubtful that his less well grounded disciples would have been able to expand their writings into the philosophical and at times religious dogma which certain segments of the psychoanalytical school spawned. Fortunately, thanks to to advances in neuroanatomy and physiology, these points of view and beliefs now are being dropped even by some of the more orthodox psychoanalysts.

But, the lack of adequate basic training in the biological and clinical neurological sciences has made them, with few exceptions, unable to correlate the more subtle and complex neurobiological knowledge of recent decades with behavioral disorders. Yet the neurobiological understanding of the complex functions of the higher levels of the neuraxis has reached sufficient clarity that the more neurobiologically minded psychiatrists (including those who have had formal psychoanalytical training) are now beginning to correlate their dynamic concepts of behavior, including those of Freud, with the function and structure of the nervous system.

Following are a few examples of advances in neurobiology made by neuroanatomists, neurophysiologists, neurologists, neurosurgeons and psychiatrists (including psychoanalysts) which establish behavior as a function of the nervous system.

Gerard.[4] a physiologist. expressed opinion that the psychoses are predominantly associated with disturbances in neuron metabolism. Change in plasma osmotic pressure, he held. influences appropriate specialized neurons in the hypothalamus. He went on to state that "we still have to discover the osmoreceptors of hallucinations and the chemoreceptors of dreams." Under the influence of theoretical engineering knowledge, called cybernetics, much attention has been and is being given to the continuous and discontinuous character of the interaction within the more complex neuronal networks of the higher levels of the neuraxis. Quoting Gerard again, "When the input [from environment] to our biological calculators has been effectively coded. the rules of operation already built into these nervous systems will suffice to grind out important answers in the mental area, as they already have in the biological."

One of the great advances made possible by contributions from neurophysiologists, neuroanatomists and neurosurgeons was the discovery of the influences that the reticular formation of the brain stem, the hypothalamus and interlaminar nuclei in the diencephalon have upon cerebral activity. The influence of these particular neuronal systems on the state of consciousness is already well established. This discovery and the elaboration of these findings is of utmost importance to psychiatry. It will be of primary concern to forward-looking neurologists and psychiatrists.

The growing knowledge of chemistry as related to behavior through the influence of chemicals on special levels and systems of the neuraxis—for example mescaline and lysergic diethylamide creating schizophrenic-like behavior—is a further contribution of the neurochemists and physiologists which will hasten the union of the now artificial dichotomy of the "organic" and "functional" specialists of disorders of the nervous system. The terms *conscious* and *unconscious* as used by the psychiatrists, and that are so distasteful to the neurologists in the absence of a neurobiological explanation, can now be acceptable to both. Gerard said that we may look upon unconscious acts in terms of automatic and condition-learned acts which reach conscious awareness by some kind of summation. The growing com-

prehension of neuronal networks with certain circular impulses in a more or less continuous fashion is a probable wedge into the understanding of memory, recall, awareness and alertness. A disturbance of these circular and reverberating circuits is a possible basis for the cause of affective, perceptive and ideational psychoses. These are a few of the neurophysiological and chemical advances which signal the neurologist to absorb disorders of behavior into his field of interest, and the psychiatrist to adjust his concepts of behavior dynamics and/or pathogenesis to the organ of the mind, the central nervous system.

Mackay,[6] a neurologist, in concluding a subject entitled "Memory as a Biological Function," clearly stated the need of orienting behavior—in this instance memory—more clearly to the basic stuff of medicine if it (behavior) is to remain truly an endeavor of the profession of medicine. Mackay observed: "It appears that memory is a basic attribute to all living things, by which patterns of sensitivity and response, both inborn and acquired, are retained and progressively modified under the impact of experience. Memory is thus indispensable in all behavior, making it at once consistent and modifiable." His concept of triangular pattern memories as a spatial and temporal function of the cerebral cortex and centroencephalic modifying function of the reticular formation of the brain stem, as unveiled by Magoun and others, is most sound. He further concluded that "in the higher animals and in man, therefore, memory can have no precise localization and thus cannot be said to 'reside' in the temporal lobe or in any other restricted area." In the simplest organisms memory seems to be dependent upon modifiable molecular structure. The memory mechanism in a nervous system is a most elusive function of neuronal networks by which topographic and sequential patterns of stimuli sensitize the network to subsequent stimuli in the same patterns. This probably occurs through the device of summation in reverberating circuits rather than by the facilitation of anatomical pathways. This dynamic approach to the physiology of memory promises much for our understanding of the behavior of living things.

Dr. Bernard Alpers, recent past president of the American Board of Neurology and Psychiatry, in his retiring presidential report to the Board, expressed concern over the desire of some workers to separate neurology and psychiatry. "I have been somewhat troubled," he said, "by a recent desire on the part of some members of our profession (not Board members) to separate neurology and psychiatry and to dispense with the neurological portions of our examinations . . . I need not emphasize to this Board the fact that the understanding of the structure and mechanism of the nervous system is not only helpful in the training of a psychiatrist but in my opinion is also useful. . . . Many of the problems which puzzle the psychiatrist are germane to the field of neurology and are the concern of investigators in this field. The problems of memory, consciousness, and of the emotions and endocrines come easily to mind. And more important still is that in-between land of the structural and psychogenic which has been so much enriched in recent years by the studies in psychomotor or temporal lobe seizures. I cannot believe that any psychiatrist can afford to overlook or neglect the contributions of neurology to his field and certainly young psychiatrists in training should be encouraged and expected to obtain such understanding."

Dr. Alpers then discussed the opinions expressed in certain psychiatric circles referring to the relationship of psychiatry to medicine but not to neurology through the field of so-called psychosomatics. He clearly pointed out that the rooting of psychiatry to medicine through psychosomatics is only achieved through the science of neurology. "Obviously they involve the nervous system, cerebrum, brain stem, spinal cord, and even peripheral nerves. They are as closely related to neurology as to medicine. Or, to avoid the humiliation of a jurisdictional dispute, let us say that they are part of medicine but allied to neurology. In this way the psychiatrist can have it both ways. He can have the dignity of alliance with medicine and avoid the stigma of inclusion with neurology. If he understands what is meant, it makes little difference; but there must be no abandonment of neurology." Doctor Alpers closed his presidential report to the Board with a quotation from scripture—Jeremiah, 23:28—"What hath the straw to do with the wheat?" And, said Dr. Alpers, "For myself, I hope threshing time never arrives for this Board and that straw and wheat never become separated."

Penfield[7,8] and associates found that stimuli of the temporal cortex may elicit hallucinations, dreams, memories, illusions and forced thinking. Furthermore, they observed stimuli of the mesial surface of the temporal lobes and insula can elicit such emotional behavior feelings as "scared feelings," "fright," "fear," and "sadness." Stimuli of these same neocortical regions will produce such visceral behavior and/or resulting sensations as hunger, cardiac acceleration and peculiar tastes. Such visceral phenomena are an integral part of the emotional experience even though in a modified form. This statement is further reinforced by studies which demonstrated that the hippocampus proper

and related rhinencephalic structures are involved in the integration of visceral behavior and emotional experience.

Cushing,[2] in his papers relating to the pituitary body, the hypothalamus and the parasympathetic nervous system, concluded that: "Those favorably disposed toward the neurogenic conception of ulcer have in process of time gradually shifted the burden of responsibility from the peripheral vagus to its center in the medulla, and now to the interbrain, newly recognized as a highly important, long overlooked station for vegetative impulses easily affected by psychic influences. So it may easily be that highly strung persons, who incline to the form of nervous instability classified as parasympathetic (vagotonic), through emotion or repressed emotion, incidental to continued worry and anxiety and heavy responsibility, combined with other factors such as irregular meals and excessive use of tobacco, are particularly prone to have chronic digestive disturbances with hyperacidity often leading to ulcer."

Cobb,[1] in a monograph on Foundations of Neuropsychiatry under the heading "Concerning Dichotomies" noted that dichotomies "mental or physical," "functional or organic" are inexact and misleading. Psychological phenomena such as thinking, wishing and dreaming, said Cobb, are just as much functions of the organism as are breathing, running and digesting. He would make three assumptions: (1) No biological process goes on without change of structure; (2) whenever the brain functions, there is organic change; (3) the brain is the organ of mind.

Rioch,[9] whose early neurophysiological contributions are well recognized, in a recent communication entitled "Certain Aspects of 'Conscious' Phenomena and their Neural Correlates" made some searching comments by melting together his basic neurophysiological contributions with his later clinical psychiatric (including psychoanalytic) experiences. Rioch correlated patterns of interaction between an individual and his inanimate and animate environment as functionally mediated through all the different levels of the nervous system from a phylogenetic orientation. He divided these interactions or transactions between the individual and his environment into six classes which may be summarized as follows: Class I are the optimal or complex transactions in which language and selection are paramount and have to do with goals in the future. Time is necessary, for even the most efficient nervous system cannot function "on the spur of the moment." Class II has to do with goals which have been predetermined. These transactions, as those in Class I, require that objects be perceived as extended in time and space. Class I and Class II transactions require the integration of all the phylogenetic levels of the nervous system. Class III allows for differential behavior, including capacity for differentiating three-dimensional space and differentiating time into a sequence of events. This may occur without selectivity (Class I) or anticipation (Class II). Transactions of Class III may be seen in panic states, or in patients with diffuse lesions in the forebrain or small bilateral midbrain lesions. Here again one recognizes the centrencephalic system in connecting the neocortex and certain diencephalic and mesencephalic centers. The older phylogenetic centers, being capable of decreasing the influence of the neocortex, minimize Class I and Class II more complex behavior, and result in Class III behavior. Class IV transactions are stereotyped with one or another aspect of the environment but not simultaneously. Such transactions in certain lower animals have survived surgical removal of the neocortex and paleocortex. Class IV behavior, therefore, does not require the phylogenetically newer and more complex levels of the neuraxis. Class V transactions are similar to those of Class IV but with limited stability of the organism with respect to space and almost no stability with respect to time. Class VI transactions are those in which only a part of the organism transacts with the environment. Such transactions are related to the function of "segmental systems" of Adolph Meyer. Classes I through IV may be regarded as having states of consciousness in decreasing ratio. Transactions of Classes V and VI Rioch would regard as unconscious. He would correlate the more complex symbolic type of human behavior with the phylogenetically younger and more complex higher levels of the neuraxis (the neocortex and paleocortex) and a simpler behavior of stereotyped patterns (including so-called "emotional" patterns) with the phylogenetically older levels—that is, the diencephalon and midbrain. There are also those transactions requiring collaborative interaction giving rise to "feelings" of affection, consideration, respect and so forth. Thus Rioch, a psychiatrist well grounded in his early training in neurophysiology, presses to correlate the different complexities and interaction levels of human behavior with the various levels of the neuraxis through a phylogenetic orientation from the highest, most complex, to the lowest, most simple segmental levels. Where, therefore, is one to draw the line of dichotomy between neurology and psychiatry or the organic and the functional?

The still relatively embryonic study of neurogenetics offers further hope and opportunity for bringing about a more integrated endeavor of our three too divergent medical specialties.

CONCLUSIONS

Brief review of a small number of investigators reporting advances in neurophysiology and anatomy of recent decades shows how this basic medical scientific knowledge is increasingly interrelating and correlating the clinical medical specialties of mind and nervous system—neurology, neurosurgery and psychiatry. The neurologist, interested in disorders of the nervous system, will expand his field of interest to human behavior opened by recent developments in neurobiology. The psychiatrist will reconstruct the foundation of his understanding of the diagnosis and treatment of human behavior on the basic medical sciences in his special field of endeavor—that is neuroanatomy and physiology. The neurosurgeon is a third integral part of the clinical specialty, for through his highly specialized technical approach he has and will continue to contribute to our research and to the solution of clinical problems. Only through the neurosurgeon's close association with the neurologist and psychiatrist will he be made aware of the problems which he can help to solve through his neurosurgical technique.

450 Sutter Street, San Francisco 8.

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CASE REPORTS

Reaction Following Ingestion of 400 Mg. of Meprobamate

BENTON L. CORLEY, M.D., and
FRANKLIN BRUNDAGE, M.D., Arcadia

THE VIRTUES AND INDICATIONS for the use of meprobamate (Miltown® and Equanil®) have been widely publicized in many magazines of general circulation, and it now is quite common for one person who has some of the tablets to offer one or more of them to a friend as a cure for almost any complaint. Hence it appears advisable for physicians to report any untoward reactions they may observe following use of the drug.

REPORT OF A CASE

The patient, a 42-year-old white woman, accepted one tablet (400 mg.) of Miltown® to enable her to endure the emotional disturbance of a death in the family. Four hours later she noticed a pruritic, fine, maculopapular eruption on the waist, buttocks and extremities. Soon afterward weakness and orthostatic syncope occurred.

When examined approximately six hours after ingestion of the drug, the blood pressure was 110/70 mm. of mercury, the pulse rate 78 and respirations 18 per minute. The patient could not stand upright because of weakness and fainting. A prominent feature was pronounced generalized erythema. Epinephrine and antihistamines were administered and the following day the patient was stronger but the rash persisted as well as erythema and weakness. The blood pressure was 130/70 mm. of mercury. ACTH Gel® (corticotropin) was given and recovery was uneventful. The skin faded and there remained a dry scaling rash for four days.

COMMENT

Since the patient took no medicine other than the one tablet of Miltown, and as the symptoms were like those reported in other cases of the kind, it is believed that this was an instance of acute toxic reaction to meprobamate.

1108 South Baldwin Avenue, Arcadia (Corley).

Submitted November 13, 1956.

Marfan's Syndrome

Report of a Probable Case

JAMES E. REEVES, M.D., and
H. R. IRWIN, M.D., San Diego

IN 1896, MARFAN[2] described an interesting syndrome consisting of arachnodactyly associated with congenital heart defects, ocular abnormalities and faulty development of the musculoskeletal system.

The first reported American case was described in 1926 by Piper and Jones,[3] who also reviewed the literature to that time. In a more recent report, Black and Landay[1] noted that the diagnosis is made primarily on clinical observations, and that laboratory tests usually are noncontributory. They observed that in 60 per cent of the reported cases of Marfan's syndrome the patients had cardiac abnormalities.

REPORT OF A CASE

The patient, a man 24 years of age, was first observed February 1, 1955. He was observed to be mentally retarded (the intelligence quotient about 60). The mother said the patient had been a "blue baby" until about one year of age. During childhood he had been in an institution for the feeble-minded for about seven years. There were no similar cases in either the maternal or paternal family history, the mother said. One sister, aged 26 years, and the father and mother, 46 and 44 years of age, were living and well.

The height of the patient was 72 inches, body weight 156 pounds and the arm span 75 inches. The ears were exceptionally prominent. Internal strabismus, "pigeon breast," hypospadias, slight webbing of the fingers, and third degree pes planus were noted. There was almost complete absence of subcutaneous fat. Pronounced overfilling of all visible veins was observed.

The heart, as outlined by percussion, was normal in size and shape. The pulse rate was 72. The blood pressure was 120/76 mm. of mercury in the left arm and 122/80 mm. in the right arm. A loud

Submitted August 23, 1956.

Visible abnormalities in the patient in the present case: "Pigeon breast," absence of subcutaneous fat, strabismus, slight webbing of spidery fingers, hypospadias, pes planus, venous distention.

"machinery murmur" upon systole was best heard over the apex of the heart and was transmitted to the great veins. No abnormalities were seen in a teleoroentgenogram of the chest. An electrocardiogram was within normal limits. An electroencephalogram showed a diffuse slight slowing of cerebral electrical activity (6 to 7 cycles per second). Results of examination of the blood and the urine were within normal limits. A Wassermann test was negative for syphilis.

The hernias were repaired and healing was by first intention.

It is believed that the conditions noted in this case were a classical Marfan's syndrome.

205 Walnut Street, San Diego 3 (Reeves).

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Traumatic Diaphragmatic Hernia; A Case Simulating Phrenic Nerve Avulsion

MILTON HOFFMAN, M.D., Pleasanton, and
I. ALFRED BRECKLER, M.D., Sherman Oaks

In the case of diaphragmatic evisceration here reported, the diagnosis was obscured by roentgen findings typical of eventration of the diaphragm, surmised to be the result of phrenic nerve injury occurring simultaneously with a brachial plexus avulsion injury. The true diagnosis was not made until severe gastric dilatation and obstruction occurred.

The patient, a 25-year-old man, was admitted to another hospital on May 22, 1954, with multiple fractures of clavicle, scapula and lumbar spine that occurred in an automobile accident. There was a left brachial plexus injury. On June 14, 1954, x-ray films of the chest showed "left lower lobe pneumonitis." The musculoskeletal injuries were treated in a routine fashion.

In February, 1955, the patient began to complain of anorexia with occasional vomiting. An upper gastrointestinal series was reported as showing eventration of the diaphragm with no intrinsic gastric disease. Upon physical examination, it was noted that there were residual neuromuscular deformities of the left upper extremity and shoulder girdle due to injury of nerve roots in the cervical vertebrae 3 to 6. Fluoroscopic examination was carried out and the left diaphragm appeared to be elevated and to move in a parodoxical fashion.

Soon after admittance to Parks Air Force Base Hospital following an alcoholic debauch, the patient developed hematemesis and pyloric obstruction, which was partially relieved by Levine tube suction (Figure 1). More than 3,000 cc. of gastric contents was removed initially. The patient was seen during this acute episode by the thoracic surgery staff, and a review of previous films suggested the diagnosis of ruptured diaphragm. This was confirmed by a second gastrointestinal series (Figure 2). At operation for transthoracic repair of the lacerated diaphragm, an 8 cm. linear tear in the posterolateral diaphragm with avulsion of the costal attachment was observed. The stomach, spleen, transverse colon and omentum were eviscerated. Dense adhesions surrounded the spleen, which apparently had been injured in the initial trauma. The abdominal viscera were replaced and, following splenectomy, a repair of the diaphragmatic rent with suture to the chest wall was done. The diaphragm functioned normally at the completion of the repair. The postoperative course was uneventful (Figure 3).

Traumatic lacerations of the diaphragm are most frequent in the left central or tendinous portion of the diaphragm and may extend into a hiatus such as the esophageal hiatus. The cause may be a crushing or penetrating injury to the abdomen or the lower

Figure 1.—April, 1955: Acute gastric dilation owing to obstruction at the hiatus of the traumatic diaphragmatic hernia.

Figure 2.—April, 1955: The thoracic position of the obstructed stomach. The esophagogastric junction and pylorus are side by side at the hiatus.

From the Thoracic Surgery Section, Parks Air Force Base Hospital, Pleasanton.

Figure 3.—May, 1955: Postoperative appearance of chest following repair of traumatic rupture of diaphragm. The diaphragm moved normally.

chest. A peritoneal hernia sac is not present.[3] The diagnosis is frequently obscured by coexistent injuries. Musselman[1] pointed out the frequency of combined injuries to diaphragm, spleen and kidney. It is believed that in the case here reported there was coexistent renal and splenic injury because of the initial microscopic hematuria and the finding at operation of dense splenic adhesions.

There are three phases in the natural history of traumatic diaphragmatic hernia.[2] In the initial phase the diaphragmatic injury is obscured by other injuries. Symptoms may vary from sparse findings in some cases to those of complete gastric obstruction in others. In this phase eventration is commonly erroneously diagnosed.[6] (In the present case, the diagnosis of eventration was based on evidence of damage to cervical nerve roots 4 to 6, which in part supply the phrenic nerve.) Not often is eventration of the diaphragm due to trauma. In the congenital forms, rarely is the phrenic nerve involved; instead, there is usually some intrinsic abnormality of the diaphragm. However, therapeutic phrenic crush or avulsion or diphtheritic phrenic neuritis will bring about eventration.

In the interval phase the diaphragmatic tear may be closed by omentum and spleen and there may be vague symptoms referable to the upper gastrointestinal tract.[5,7] The interval phase in the present case covered an eleven-month period. The defect in the diaphragm was closed by the eviscerated spleen.

The phase of obstruction may begin in a sudden, dramatic manner. A closed loop obstruction through the hiatus will cause pronounced gastric or colonic dilatation. The obstructive phase in the present case was partially relieved by gastric intubation. Obstruction probably developed as a result of an alcoholic spree when evisceration occurred with subsequent vomiting. When the stomach moves into the chest the antral region becomes obstructed, and swallowed air and fluid then causes distention. With "upside down stomach" (organo-axial gastric volvulus) only retching, and not vomiting, can occur.[4]

The diagnosis of rupture of the diaphragm is often facilitated by the use of diagnostic pneumoperitoneum. In the present case the condition was readily visualized by roentgen studies during the phase of obstruction. Reduction of the eviscerated abdominal organs was accomplished easily as a result of preoperative decompression and of splenectomy. It is felt that transthoracic repair facilitated fixing the avulsed diaphragm to the chest wall.

SUMMARY

In the case of traumatic rupture of the diaphragm here presented, the various phases in the natural history of traumatic diaphragmatic hernias are illustrated. The coincidence of brachial plexus injury, confusing shadows on x-ray films and a long asymptomatic interval led to erroneous diagnosis of eventration due to phrenic nerve avulsion.

13320 Riverside Drive, Sherman Oaks (Breckler).

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EDITORIAL

Public Health League Honored

PROFESSIONAL AND LEGISLATIVE leaders joined hands last month in honoring the joint twenty-fifth anniversaries of a medical-legislative organization and its executive secretary.

The organization is the Public Health League of California: the executive secretary is Ben H. Read, who has served as its administrator, guide and representative since the time of its inception.

Back of this joint celebration lies a lot of California medical legislative history which is well known to the oldtimers but which may represent little more than a sacred cow to many physicians and other professionals who have come to California in more recent years.

Historically, the Public Health League of California came into being in 1932, when a group of physicians in Southern California became alarmed at some of the decisions of the State Legislature. These physicians realized that their right to practice medicine—even the manner in which they practiced it—was subject to the determinations of a two-chambered Legislature of elected representatives in Sacramento. The Legislature was subject to all the blandishments of promoters of all types of legislation, some of them enamored of ideas which did not represent the best in medical practice.

In those depression days, many able but unemployed persons were scratching for a living, and imaginations had ample time in which to create new ideas. Some of these ideas, translated into legislative proposals, could have lowered medical standards either by endorsing practices which were legally frowned upon or by creating new classes of the healing arts without regard to sound training.

While the physicians in Southern California were seeing the wisdom of having legislative representation, a group of their colleagues in the San Francisco area reached the same conclusion.

The combination of these two groups brought the Public Health League of California into being and resulted in the employment of Ben Harrison Read as its first executive secretary. Ben was an Iowa-born farm boy who had secured his education in a small Iowa college and had gone on, through newspaper ranks, to become secretary to the governor of Idaho. His political acumen was honestly acquired and his lessons well remembered.

In the quarter century of its existence, the Public Health League has been the legislative representative of medicine, dentistry, hospitals, dispensing opticians and pharmacists in the Sacramento legislative halls. Its job has been to review all legislation which would affect the practice of medicine or the allied arts and to work for the passage of measures deemed beneficial and for the defeat of those considered detrimental to the public—and to physicians.

While no organization expects to turn in a completely victorious record at all times, the batting average of the League over the years has been extremely high. In the past few sessions, it can safely be said, no deleterious legislation has been adopted and all approved legislation has been passed. Credit for this achievement goes squarely to the League and its able representatives.

An idea of the present magnitude of this work can be gained from the remarks of one legislative leader who sent his tribute to the two dinner meetings which honored the Public Health League and Ben Read last month. This man said: "Ben has to be friendly but firm, resolute but diplomatic, persuasive but not antagonistic. He has to learn to know well 120 politically minded members of the Legislature, *and their wives*. He has to follow 6,000 legislative bills which are flying in all directions at once. He has to greet his constituents with proverbial red-carpet treatment and, above all, he has to get his legislative chores done. Ben commands the

greatest respect from all of us in the Legislature and his record over the years speaks for itself."

Tributes in similar vein poured in last month from Governor Knight, Lieutenant-Governor Powers, the presiding and pro tem officers of both houses of the Legislature, committee chairmen and many individual legislators who have come to know the work of the League and of Ben Read over a long span of time.

Some of the most trying tests of the Public Health League have come in the repeated attempts of governors and others to foist compulsory health insurance programs on the people of California. The going was rough in 1938, again in 1945 and yet again in 1947. Hardly a session of the Legislature passes without some new proposal for a state medical system. The League has carried out its instructions in each of these proposals and has successfully defended physicians against becoming state employees, and the people, numbered cases.

Far from stopping at California state lines, Ben Read and the organizational principles of the League have set a pattern for other states. In the early '40's, Ben spent some time in Washington, and out of his experience there came the United Public Health League, a coalition of western state medical associations, which opened the first "lobbying" office for medicine in the national capital. The A.M.A. Washington office followed.

Physicians who have not lived through some of these experiences may look upon the Public Health League of California as simply an additional item, optional though it may be, on their annual medical society dues statements. Those who have worked with the League know it as the champion of medicine in the halls where regulatory legislation is made. And the wealth of proposed legislative bills affecting medicine in every session proves the wisdom of having a watchdog on hand. It is safe to say that there is no physician in California today who does not owe his present system and freedom of practice to the continuous safeguarding of his rights by the Public Health League.

In this alliance of medicine, dentistry and kindred professions in the voluntary membership framework of the Public Health League of California, the American system of democracy is served. Grass-roots organizations, however modest their beginnings, thus prove themselves able to meet legislative threats and to secure passage of sound legislation. The beneficiaries are the people, and many of the state officials paying tribute to this silver anniversary are the first to recognize that fact.

California today has sound medical standards of very high caliber. As long as the Public Health League remains on the job, those standards will be maintained.

The Legislature Speaks

IN HONOR of the silver anniversary of the Public Health League of California and its executive secretary, Ben H. Read, the Legislature of the State of California has adopted an Assembly Concurrent Resolution which was introduced into the Assembly on January 15, 1957 under the signatures of all 80 members of that body. The resolution follows:

Assembly Concurrent Resolution No. 40—Relative to honoring the Public Health League of California and Mr. Ben H. Read, executive secretary.

"WHEREAS, A quarter of a century ago an alert group of civic minded physicians of the California Medical Association gathered together to form the Public Health League of California 'organized to protect the public health by the preservation of ethical medical, dentistry and allied health services'; and

"WHEREAS, Shortly after the formation of the league, its membership was enlarged and strengthened by embracing dentistry, pharmacy, hospitals and dispensing opticians; and

"WHEREAS, Interest in legislative matters became an early function of the Public Health League to the end that high standards of medical care for the protection of the public could be presented and supported in the California Legislature; and

"WHEREAS, During these entire 25 years the Public Health League has been represented with the dignity and respect to which these honored professions are entitled by Mr. Ben H. Read, its executive secretary; and

"WHEREAS, Mr. Read is also celebrating 25 years of continuous activity as a legislative observer, during which time his fine dedication to the high principles of the professions he represented has won for him and the Public Health League, the confidence and esteem of the members of the California Legislature; and

"WHEREAS, The Silver Anniversary of the Public Health League of California will be commemorated with proper ceremonies in San Francisco on February 1, 1957, and in Los Angeles on February 6, 1957; now, therefore, be it

"*Resolved by the Assembly of the State of California, the Senate thereof concurring,* That the Members of the Legislature hereby extend to the Public Health League of California, its officers and its members, and to Mr. Ben H. Read, sincerest congratulations on their combined twenty-fifth anniversaries; and be it further

"*Resolved,* That the Chief Clerk of the Assembly be hereby directed to transmit suitably engraved copies of this resolution to the Public Health League and to Mr. Ben H. Read."

Letters to the Editor . . .

To the Editor:

I have just read "Care of the Patient with Advanced Cancer" in the October issue of CALIFORNIA MEDICINE. On the whole this is an excellent article, but to the urologist, one paragraph seems to be an important error.

It is paragraph two under "Steroid Hormones" on page 270, which states, in part, "In patients resistant to estrogens, a more cautious trial with androgenic hormone is justifiable."

Except in very rare instances when the cancer is completely out of sex hormone control, androgen invariably aggravates cancer of the prostate. This is a fact and not an opinion, and can easily be checked by reference to any reliable article on the subject. Estrogens, on the other hand, are usually palliative.

It is possible that the authors wished to suggest that cortisone be used when estrogen fails, or that this sentence is intended to refer to some disease other than cancer of the prostate.

In any case, I cannot believe that the C.M.A. Cancer Commission wishes to advocate androgen in advanced carcinoma of the prostate, and feel that it is most important to correct this error at the earliest opportunity.

The sentence preceding the one on androgen is also misleading in that it states that estrogen should be continued for at least three months. In general, estrogen should be continued for the life of the patient, with or without castration, according to his clinical course. The matter of estrogens in this disease is covered adequately in Section 10 of the same article. page 269.

Sincerely yours,
FREDERICK S. HOWARD, M.D.

To the Editor:

The criticism of Dr. Frederick S. Howard concerning the suggestion that androgens might be employed in patients with carcinoma of the prostate who have become resistant to treatment by estrogens is in some degree justifiable. The statement should have made more emphatic the possible augmentation of prostatic carcinoma by the use of androgens. By inference, the recommendation only related to those men whose disease has shown objective response to estrogens, and in whom it has developed a resistant phase. Inasmuch as the necessity of achieving maximum brevity in the publication of the Cancer Commission in which this statement appeared was of considerable importance, there were many areas throughout the manuscript in which elaboration would have been helpful, but in which elisions became necessary.

Further, assuming that steroid hormone therapy is properly used only for disease which has become metastatic, and assuming further that the most useful therapeutic measures for control in the form of castration and estrogen administration have become no longer helpful, one is obviously dealing with a patient who is facing early death, and frequently with requirements for considerable amounts of narcotic due to pain from skeletal disease. Under such a circumstance, and with the admonition that androgenic hormones may be unfavorable in their effect, I see no reason why an interested clinician should not make a cautious trial with the hope of obtaining further control of the disease in an occasional patient.

IAN MACDONALD, M.D.
Member of the Cancer Commission, California Medical Association

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Executive Committee Minutes

Tentative Draft: Minutes of the 262nd Meeting of the Executive Committee, California Medical Association, San Francisco, January 31, 1957.

The meeting was called to order by Chairman Heron in the Windsor Room of the Sir Francis Drake Hotel, San Francisco, on Thursday, January 31, 1957, at 3:30 p.m.

Roll Call:

Present were President Charnock, President-elect MacDonald, Council Chairman Lum, Speaker Doyle, Auditing Committee Chairman Heron and Secretary Daniels. Absent for cause, Editor Wilbur.

A quorum present and acting.

Present by invitation during all or part of the meeting were Messrs. Hunton, Thomas and Gillette of C.M.A. staff, legal counsel Hassard, Doctor W. E. Batchelder, medical director of the Cancer Commission, and Doctors Wayne Pollock, T. Eric Reynolds, John W. Cline, David A. Wood and Francis J. Cox.

1. *Membership:*

(a) On motion duly made and seconded in each instance, 17 applicants were voted Retired Membership. These were:

Rubie Durgin, Alameda-Contra Costa County; Frank O. Brigham, William N. Carter, Roy A. Cummings, Ida Heissig, Arnold M. Scholz, Henry N. Shaw, Edgar B. Spear, Herbert E. Tebbetts, John Vruwink, Los Angeles County; Lloyd G. Tyler, Marin County; Einer V. Blak, Edward H. Bolz, Jr., Lois H. Brock, Adolph G. Rosenthal, Harold G. Watson, San Francisco County; William Friedberger, San Joaquin County.

(b) On motion duly made and seconded in each instance, 15 applicants were voted Associate Membership. These were:

Kenneth R. Gaarder, Alton R. Higgins, Alameda-Contra Costa; Lilly Li Chen, Burt Cockran, Jr., Gordon J. Kinley, James J. Quilligan, David M. Parker, Isaac Persyko, Stanley W. Wright, Los Angeles County; Harold M. Gibbons, Sacramento County; Warren S. McClatchey, Jerome F. Smith, San Diego County; Raymond Reitzel, John S. Wellington, San Francisco County; Billy W. Mounts, San Luis Obispo County.

(c) On motion duly made and seconded, 28 applicants were granted reduction in dues because of prolonged illness or postgraduate study.

2. *Committee on Other Professions:*

Doctor Wayne Pollock, chairman of the Committee on Other Professions, reported on meetings held with representatives of another group and requested authority to continue such meetings under a proposed program. On motion duly made and seconded, authority was granted for further meetings.

3. *Cancer Commission:*

Doctor John W. Cline discussed the terms of Assembly Bill No. 2359 and requested approval of it by the Association. On motion duly made and seconded, it was voted to approve this measure as a co-sponsor with the American Cancer Society.

DONALD A. CHARNOCK, M.D. . . . . President
FRANK A. MacDONALD, M.D. . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
J. NORMAN O'NEILL, M.D. . . . . Vice-Speaker
DONALD D. LUM, M.D. . . . . Council Chairman
ALBERT C. DANIELS, M.D. . . . Secretary-Treasurer
IVAN C. HERON, M.D. . Chairman, Executive Committee
DWIGHT L. WILBUR, M.D. . . . . Editor
JOHN HUNTON . . . . . Executive Secretary
General Office, 450 Sutter Street, San Francisco 8
ED CLANCY . . . . Director of Public Relations
Southern California Office:
417 South Hill Street, Los Angeles 13 • Phone MAdison 6-0683

4. *California Physicians' Service:*

Doctor T. Eric Reynolds, president of the Board of Trustees of California Physicians' Service, discussed several proposals now before that board on the questions of meeting dates and the structure of the organization. It was agreed that these matters should be presented to the Council for consideration.

5. *Rehabilitation:*

Doctor Francis J. Cox called attention to the community of interest in the fields of rehabilitation, disability, social security, workmen's compensation and allied fields. He requested authority to call a meeting of physicians interested in these subjects, for a discussion of basic policies, definitions, etc., and, on motion duly made and seconded, authority was voted.

6. *School Health:*

On motion duly made and seconded, it was voted to name Mr. Robert L. Thomas as the C.M.A. representative on a School Health Committee formed by the California Heart Association.

7. *Citizens' Committee on Tuberculosis:*

Doctor Daniels reported on a request received to name consultants to a Citizens' Committee on Tuberculosis formed in Sacramento County. On motion duly made and seconded, it was voted to request Doctors Howard Bosworth and Myles Black of Los Angeles to serve in this capacity.

8. *Professional Conduct:*

Mr. Hassard reviewed a complaint sent to the Association relative to treatment received from a physician, and the executive secretary was instructed to forward this to the appropriate county medical society.

9. *Commission on Medical Services:*

On motion duly made and seconded, it was voted to authorize the use of the mailing list for sending a pamphlet on health insurance issued by the Health Insurance Council.

10. *Time and Place of Next Meeting:*

It was agreed that the next meeting of the Executive Committee should be held in San Francisco on Wednesday, April 10, 1957, at 3:30 p.m.

11. *Poliomyelitis Vaccinations:*

Mr. Hunton reported on two meetings which had been held by staff members with representatives of the State Department of Public Health on the subject of the polio vaccination campaign. A further meeting is planned for February 9 with health officers and the members of the Medical Executives Conference.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:45 p.m.

Ivan C. Heron, M.D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

TWO POSTGRADUAT

One in Mar

SAN JOAQUIN VALLEY COUNTIES

Presented by *Postgraduate Activities Committee* of the California Medical Association, in cooperation with University of California School of Medicine, San Francisco, Seymour M. Farber, M.D., Head of Postgraduate Instruction.

FRESNO . . . March 21-22, 1957 . . . Hotel Californian

PROGRAM

THURSDAY MORNING, MARCH 21

RECENT PROGRESS IN OFFICE ENDOCRINOLOGY

9:00-9:55—*Advances in Diagnosis and Treatment of Diseases of the Thyroid*—Bernard G. Anderson, M.D., Chief of Thyroid Clinic; Clinical Instructor in Medicine.

10:10-11:05—*The Diagnosis and Treatment of Common Metabolic and Endocrine Bone Diseases*—Gilbert S. Gordan, M.D., Chief of Endocrine Clinics and Assistant Professor of Medicine.

11:05-12:00—*Recent Advances in the Field of Adrenals and in Diabetes*—Peter H. Forsham, M.D., Chief of Endocrinology and Metabolism and Associate Professor of Medicine and Pediatrics.

12:00-2:00—Luncheon and Panel Discussion—

(a) *Progress in Postgraduate Medical Education*—Seymour M. Farber, M.D.

(b) *What Are the Best Diagnostic Points in Endocrine Disease and the Most Appropriate Minimal Follow-up Studies Required*—Panel of morning faculty members.

THURSDAY AFTERNOON, MARCH 21

THE NEGLECTED BUSINESS WORLD OF THE PHYSICIAN

2:00-2:30—*Clinical Pathological Conference on Tax Problems of the Medical Profession*—Mr. Clarence E. Musto, General Partner of Morrison, Foerster, Holloway, Sherman and Clark.

2:30-3:00—*Estate Planning for Physicians*—Mr. David A. Bardes, Insurance Consultant.

3:00-3:30—*A Protective Investment Program—Tax Free Bonds, Common Stocks, Mutual Funds*—Mr. Albert E. Schwabacher, Jr., General Partner, Schwabacher and Co.

3:45-5:00—Panel Discussion and Questions from the Audience—*Dynamic Business Concepts in Planning for the Future*—Messrs. Musto, Bardes, Schwabacher.

5:00-6:00—Social Hour—Hotel Californian. All physicians present invited to attend. No charge.

FRIDAY MORNING, MARCH 22

BACTERIA, VIRUSES AND ANTIBIOTICS

9:00-9:30—*Rational Choice of Antimicrobial Agents*—Ernest Jawetz, M.D., Professor of Microbiology and Lecturer in Medicine and Pediatrics.

9:30-10:00—*Current Status of Treatment in Selected Bacterial Infections of Adults*—Henry D. Brainerd, M.D., Professor of Medicine and Chairman of the Department.

10:00-10:30—*Antimicrobial Therapy in Common Diseases of Children*—Henry B. Bruyn, M.D., Assistant Professor of Pediatrics and Medicine; Chief of Isolation Service, San Francisco Hospital.

10:30-11:00—*Panel Discussion on Antimicrobial Therapy.*

11:00-11:20—*Some Common Clinical Entities Associated With Newly Recognized Viruses*—Ernest Jawetz, M.D.

11:20-12:00—*Developments in Immunization Against Virus Diseases*—Henry D. Brainerd, M.D.

12:00-2:00—Luncheon. Discussion by participants and morning panel members: *Problems in the Diagnosis and Treatment of Bacterial and Viral Infections.*

(Continued bottom of next page)

NSTRUCTION INSTITUTES

ne in April

NORTH COAST COUNTIES

Presented by *Postgraduate Activities Committee* of the California Medical Association, in cooperation with Stanford University School of Medicine, Lowell A. Rantz, M.D., Director of Postgraduate Programs.

SANTA ROSA . . . April 11-12, Veterans Memorial Auditorium

PROGRAM

THURSDAY, APRIL 11, 1957

9:00-10:00 a.m.—*Cardiac Surgery in Infancy and Childhood*—Frank L. Gerbode, M.D., Associate Professor of Surgery.

10:15-12:00 a.m.—Two Concurrent Panel Discussions* (you may go to one of your choice)—
Abdominal Pain.
Dermatology.

12:00-2:00 p.m.—Luncheon—One faculty member will be seated at each table for informal discussions with physicians present.

2:00-3:00 p.m.—*Significance of Systolic Murmur*—Herbert Hultgren, M.D., Associate Professor of Medicine.

3:15-5:00 p.m.—Two Concurrent Panel Discussions* (you may go to one of your choice)—
Diseases of the Chest.
Surgery in the Cardiac Patient.

7:00-12:00 p.m.—Social Hour, Dinner and Dancing.

FRIDAY, APRIL 12, 1957

9:00-10:00 a.m.—*Anticoagulant Therapy*—David Rytand, M.D., Professor and Executive, Department of Medicine.

10:15-12:00 a.m.—Two Concurrent Panel Discussions* (you may go to one of your choice)—
Hypertension.
Chemotherapy in Hematology.

12:00-2:00 p.m.—Luncheon.

2:00-3:00 p.m.—*Treatment of Anemia*—William Creger, M.D., Associate Professor of Medicine.

3:15-5:00 p.m.—Two Concurrent Panel Discussions* (you may go to one of your choice)—
Coma.
Endocrines.

**Each panel discussion will be led by three faculty members and one physician from the community.*

HOSTS: Sonoma County Medical Society . . . **REGIONAL CHAIRMAN:** Robert S. Quinn, M.D., 185 Sotoyome Street, Santa Rosa. FEE: $15.00. For additional information contact Postgraduate Activities Office, California Medical Association, 417 South Hill Street, Los Angeles 13. All California Medical Association members are cordially invited to attend.

(Continued from previous page)

FRIDAY AFTERNOON, MARCH 22

MEDICAL-LEGAL PROBLEMS

2:00-3:00—*The Doctor in Court*—Mr. Bernard E. Allard of the Oakland Bar.

3:00-3:45—*The Medical Witness*—A 34-minute film prepared jointly by the American Medical Association and the American Bar Association (first showing in California).

4:00-5:00—*The Doctor and Malpractice*—Mr. John Wynne Herron of the San Francisco Bar.

HOSTS: Fresno County Medical Society . . . **REGIONAL CHAIRMAN:** R. H. Whitten, M.D., 2912 Fresno Street . . . FEE: $15.00. For additional information, contact Postgraduate Activities office, California Medical Association, 417 South Hill Street, Los Angeles 13. All California Medical Association members are cordially invited to attend.

In Memoriam

Austin, Gerald John. Died in Bell Garden, December 30, 1956, aged 32. Graduate of the University of Southern California School of Medicine, 1949. Licensed in California in 1949. Doctor Austin was a member of the San Diego County Medical Society.

✤

Bruechert, Stanley Schaefer. Died in Altadena, Febru-2, 1957, aged 53. Graduate of Rush Medical College, Chicago, Illinois, 1930. Licensed in California in 1930. Doctor Bruechert was a member of the Los Angeles County Medical Association.

✤

de Mailly, Robert G. Died in Daly City, January 16, 1957, aged 39, of gunshot wounds inflicted by an assailant. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1944. Licensed in California in 1944. Doctor de Mailly was a member of the San Francisco Medical Society.

✤

Fisher, Virgil Luther. Died in Long Beach, January 13, 1957, aged 81. Graduate of the American Medical Missionary College, Battle Creek, Michigan-Chicago, Illinois, 1906. Licensed in California in 1929. Doctor Fisher was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Gregory, Dewey Quintin. Died near Scotia, February 3, 1957, aged 59, of drowning after an automobile accident. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1943. Licensed in California in 1943. Doctor Gregory was a member of the Humboldt County Medical Society.

✤

Haworth, Walter L. Died January 23, 1957, aged 72. Graduate of the Indiana University School of Medicine, Bloomington-Indianapolis, 1910. Licensed in California in 1916. Doctor Haworth was a member of the Los Angeles County Medical Association.

✤

Henderson, Andrew Mitchell, Sr. Died January 31, 1957, aged 88. Graduate of Cooper Medical College, San Francisco, 1893. Licensed in California in 1894. Doctor Henderson was a life member of the Sacramento Society for Medical Improvement and the California Medical Association, and a member of the American Medical Association.

✤

Kellogg, Ernest C. Died August 1, 1956, aged 91. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1922. Licensed in California in 1923. Doctor Kellogg was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

Kinney, Jean Girton. Died in Santa Monica, December 24, 1946, aged 60, of coronary thrombosis. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor Kinney was a member of the Los Angeles County Medical Association.

✤

Murray, Robert A. Died in La Mesa, January 17, 1957, aged 47, of cancer. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1938. Licensed in California in 1944. Doctor Murray was a member of the San Diego County Medical Society.

✤

Randall, Samuel B. Died in Santa Cruz, February 1, 1957, aged 58, of carcinoma of the stomach. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1925. Licensed in California in 1925. Doctor Randall was a member of the Santa Cruz County Medical Society.

✤

Ray, Earl B. Died in Bellflower, January 6, 1957, aged 59, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1929. Licensed in California in 1929. Doctor Ray was a member of the Los Angeles County Medical Association.

✤

Tillotson, Joseph Elmer. Died near Arbuckle, January 22, 1957, aged 53, of injuries suffered in an automobile accident. Graduate of Columbia University College of Physicians and Surgeons, New York, N. Y., 1929. Licensed in California in 1932. Doctor Tillotson was a member of the Yuba-Sutter-Colusa County Medical Society.

✤

Thomas, Benjamin. Died in Oakland, January 25, 1957, aged 86. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1901. Licensed in California in 1901. Doctor Thomas was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Towne, Edward B. Died in Palo Alto, January 13, 1957, aged 73. Graduate of Harvard Medical School, Boston, Massachusetts, 1913. Licensed in California in 1919. Doctor Towne was a retired member of the Santa Clara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Wilson, John C. Died in Los Angeles, January 9, 1957, aged 68, of hypertensive heart disease. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1912. Licensed in California in 1912. Doctor Wilson was a member of the Los Angeles County Medical Association.

memo from: medical review and advisory board
OF THE CALIFORNIA MEDICAL ASSOCIATION

Death Certificates, Birth Certificates—Rules Governing Physicians and Coroners

PAUL MICHAEL, *M.D.*, Oakland

MANY PHYSICIANS have but cursory knowledge of the California State Health and Safety Code by which they are required to abide. Drawing attention to certain aspects of the Code may serve a need and be of some value to the practicing physicians of this state.

Coroners in the state sometimes have made local changes in procedure that conflict with this Code, not realizing there was no legal basis whatsoever for their decisions. For instance, there is a widely held belief that a death occurring within 24 hours after admission to a hospital is a "coroner's case." There is no law in the State of California which makes deaths occurring in hospitals within 24 hours after admission, coroners' cases provided the attending physician has a professional opinion as to the cause of death. If he does have such an opinion, the matter of how long the patient was in the hospital is of no consequence and, therefore, the physician is eligible to sign the death certificate and such a case is not one in which the coroner has jurisdiction.

Another misconception regarding jurisdiction of the coroner's office is regarding death during surgical operation. There is no law in this state which specifically states that such a death should come under the jurisdiction of the coroner, provided the operation is performed according to accepted medical practices and standards and the anesthetic given is proper as accepted by the medical profession. Here, again, the only exception to this rule would be if the attending physician were willing to go on record as not having a professional opinion as to the cause of death. Another exception might be a situation in which, say, there was some doubt about a drug that was used, which might raise a question of accident.

Another prevalent misconception regards the disposition of one's own body or parts of bodies. Section 20 of the California Probate Code provides:

> "Every person of sound mind, over the age of 18 years, may dispose of his or her separate property, real and personal, by will. In addition, every such person may by will dispose of the whole or any part of his or her body to a teaching institution, university, college, State Director of Public Health or legally licensed hospital, either for use as such institution, university, college or hospital may see fit, or for use as expressly designated therein."

Hence, an autopsy permit, among other things, signed by the decedent is valid.

On September 7, 1955, Senate Bill 995 amending Section 7113 and Section 7114 of the Health and Safety Code became law. The amended law reads as follows:

> "A cemetery authority or licensed funeral director or a licensed hospital or its authorized personnel may permit or assist, and a physician may perform, an autopsy of any remains in its or his custody upon the receipt of a written authorization from a person representing himself to be any of the following:
>
> "(a) The surviving spouse; (b) a surviving child or parent; (c) a surviving brother or sister; (d) any other kin or person who has acquired the right to control the disposition of the remains; (e) a coroner or any other duly

authorized public officer. A cemetery authority or a licensed funeral director or a licensed hospital or its authorized personnel is not liable for permitting or assisting, and a physician is not liable for performing, an autopsy pursuant to such authorization unless he or it has actual notice that such representation is untrue at the time the autopsy is performed. (Amended by Stats. 1955, Ch. 1334, Par. 1.)"

"Any person who performs, permits or assists at, an autopsy on a dead body without having first obtained (a) the authorization of the deceased in writing, including, but not limited to, the last will of the deceased; or (b) the authorization in writing of the person designated by Section 7100 of this code as having the right to control the disposition of the remains of the deceased; or (c) in the case of a cemetery authority or a licensed funeral director or a licensed hospital or its agents or a physician, the written authorization described in Section 7113 of this code, is guilty of a misdemeanor, except that this Section shall not be applicable to the performance of an autopsy by the coroner or other officer authorized by law to perform autopsies. (Amended by Stats. 1955, Ch. 1334, Par. 2.)"

Section (d) 7113 indicates that the right to give the authorization is only vested in the person who has acquired the right to control the disposition of the remains.

Section 7110 provides that both parents, if alive, must sign autopsy permits in the case of a deceased minor. If legally separated, the one who has legal custody and also has the right of disposition of the remains has the right to sign permits for autopsies.

Another pitfall which should be eliminated is signing of autopsy permits by members of the family before the death of the person upon whose body autopsy is to be done. These permits are legally invalid.

Article 3, Section 1041 states that a physician shall sign within fifteen hours after the death a certificate at the place of death and deliver it to the attending funeral director at his place of business or at the office of the physician. As this Section is of the utmost importance to all practicing physicians, the following passages are quoted from Article 3 regarding the signing of death certificates:

Section 10400.

"The medical certificate shall be made and signed by the physician, if any, last in attendance on the deceased except in the following cases:

"(a) Where the attending physician is unable to state the cause of death.

"(b) Where a person has been killed or has committed suicide.

"(c) Where death is the result of an accident.

"(d) Where an injury is a contributing cause of death.

"(e) Where the death occurred under such circumstances as to afford a reasonable ground to suspect that it was caused by the criminal act of another."

Section 10401.

"The physician shall within fifteen hours after the death deposit the certificate at the place of death, or deliver it to the attending funeral director at his place of business or at the office of the physician."

Section 10402.

"The physician shall specify in the certificate the time in attendance, the time he last saw the deceased person alive and the hour of the date at which death occurred."

Section 10403.

"The physician shall state the cause of death, so as to show the course of disease or sequence of causes resulting in the death, giving first the name of the disease causing death (primary cause) and the contributory (secondary) cause, if any, and the duration of each."

Section 10404.

"Indefinite and unsatisfactory terms, denoting only symptoms of disease or conditions resulting from disease, are not sufficient for the issuance of a burial or removal permit. Any certificate containing only such terms, as defined by the State registrar, shall be returned to the physician or person making the medical certificate for correction and more definite statement."

Section 10405.

"Causes of death which may be the result of either disease or violence shall be carefully defined; and if from violence, the means of injury shall be stated, and whether (probably) accidental, suicidal, or homicidal."

And finally, it behooves members of the medical profession to know the specific duties of the coroner. According to Article 4 of the Health and Safety Code of the State of California, the following facts more or less circumscribe his duties:

Section 10425.

"The certificate of death shall be made by the coroner in case of any death occurring under any of the following circumstances:

"(a) Without medical attendance.

"(b) During the continued absence of the attending physician.

"(c) Where the attending physician is unable to state the cause of death.

"(d) Where the deceased person was killed or committed suicide.

"(e) Where the deceased person died as the result of an accident.

"(f) Under such circumstances as to afford a reasonable ground to suspect that the death was caused by the criminal act of another."

Section 10426.

"The physician, funeral director, or other person in charge of the body shall notify the coroner or other proper official of such death for investigation and certification."

Section 10427.

"The coroner or other proper officer whose duty it is to hold an inquest on the body of any deceased person, and to make the certificate of death required for a burial permit, shall:

"(a) State in his certificate the name of the disease causing death, or if from external causes (1) the means of death; and (2) whether (probably) accidental, suicidal, or homicidal.

"(b) Furnish such information as may be required by the State registrar in order properly to classify the death. Upon the issuance of the death certificate and burial permit the cemetery authority may proceed with the interment (Amended by Stats. 1941, Ch. 182)."

Section 10428.

"The certificate shall contain as many facts required by this division as can be ascertained."

Section 10429.

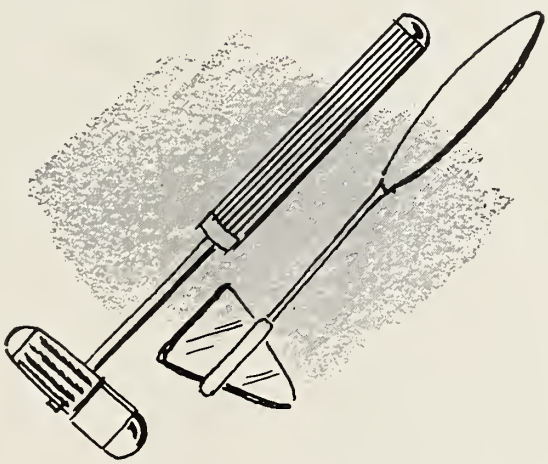
"The coroner shall within three days after examining the body deliver the death certificate to the attending funeral director."

Birth Certificates

Section 10175 of the Health and Safety Code provides that within four days after birth, a certificate shall be filed and if a physician was in attendance he shall sign and add any necessary statements about complications, length of gestation, etc.

* * *

It is hoped that the above items dealing with certain aspects of the Health and Safety Code will help practicing physicians in obtaining a better understanding of these legal problems.



WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Nurse Recruitment in California

Is THERE really a shortage of nurses in the State of California? Or, has there merely been a great deal of loose talk on this subject?

In the ten years following World War II California's population increased from 9 to 13.7 million. About 70 per cent of this great increase in growth has been due to the emigration of people from other parts of the country to California. Dr. Alice E. Ingmire, an associate professor at the University of California in Berkeley, says that California is a debtor state in that it has long been dependent upon nurses trained in other states. These out-of-state nurses make up a substantial proportion of the 70 per cent population increase due to emigration from other states. For this reason, our cities have not felt so much the pinch of shortage of staff nurses, but California has long felt the shortage of staff nurses in rural areas and the shortage of well-prepared nurses, particularly those prepared for supervision and teaching.

In nonprofessional nurse groups there will be increasing need for more people to care for the chronically ill and for convalescent patients in hospitals, nursing homes, and their own homes. Many of these need higher skills. In the registered and professional nursing groups the demand will sharply increase for industrial nurses in large centers, for school nurses to care for the five and six million new school children over the next five years, for public health nurses in increasing numbers for both urban and rural areas of the state, and for hospital staff nurses, particularly in the rural areas.

At present there is need for specialists in clinical nursing, in teaching, supervision, administration and for consultation services. One nurse in eleven holds a position of administrator, supervisor, faculty member or consultant. All of these positions require higher education and greater experience. Incidentally, there is also an increasing shortage of qualified laboratory technicians and qualified workers in various other allied fields of medicine.

What is being done to relieve this shortage of nurses? Actually the shortage is nation-wide and movements of national proportion are afoot, as witness spot announcements over radio, and occasionally over TV, magazine advertisements, and various poster displays for the purpose of interesting girls and young women in nursing as a profession. The National League for Nursing, the American Nurses' Association, and the Woman's Auxiliary to the American Medical Association are all active in this work. But are you aware of the roll your own California Woman's Auxiliaries are playing in this work?

Did you know that from woman's auxiliaries in California during the twelve months ended May 30 last year 228 girls received nursing scholarships? . . . That 88 future nurse clubs were operating in California high schools under county auxiliary sponsorship? . . . That county auxiliaries sponsored 151 career days or other programs related to nurse recruitment in California high schools?

These two recruitment aids, future nurses' clubs (under various names) and nursing scholarships are two of the most valuable methods for obtaining more nursing personnel. Future nurses' clubs bring the nursing profession closer to high school girls. The aim is to educate the prospective nurse as to her programming as well as her emotional and physical needs. The program aims also at educating school counselors as to the nursing profession's needs and requirements. Members of future nurses' clubs go on field trips to hospitals and laboratories, hear outside speakers such as physicians, nurse educators and alumnae now in the nursing profession. Films on nursing and allied fields are shown. Counseling is provided and questions of parents and students are answered. Such clubs have their own officers, run their own meetings and make their own plans. Auxiliary members are present to offer adult guidance, to arrange transportation for field trips, etc., and otherwise to facilitate club activities.

Nursing scholarships make possible nurse training for deserving girls who would otherwise be unable to obtain it. A healthy trend has been noted recently in the example of a large surgical supply firm which, instead of sending Christmas gifts to its various medical customers as it had done for many years, used the money these gifts would have cost to establish a number of nursing scholarships, publicizing this in a Christmas letter to its customers.

Mrs. Paul C. Blaisdell, president of the Woman's Auxiliary to the C.M.A., has rightly placed great stress on the nurse recruitment program. In charge of this important phase of auxiliary activity she has placed Mrs. Lloyd D. Fisher, who is herself a nurse educator by training, who has been chairman of her own Alameda County Nurse Recruitment Committee for several years, and who is also Nurse Recruitment Chairman of the California League for Nursing, Unit A. Under the guidance of Mrs. Fisher, criteria for scholarship administration and broadened recruiting methods are being established.

And so, doctor, your wives, in addition to managing your families and your homes, and attempting to keep you happy, are doing an increasingly big job in trying to relieve the shortage of nurses which threatens to cripple medical facilities designed to relieve human suffering.

NEWS & NOTES

NATIONAL • STATE • COUNTY

IMPERIAL

Dr. A. A. Adames was elected president of the Imperial County Medical Society at a recent meeting of the organization, and Dr. Burke Schoensee was elected vice-president. Dr. Ernest Brock was reelected secretary-treasurer. Dr. Sidney Tepper and Dr. Gene T. Richardson were named delegates to the California Medical Association.

LOS ANGELES

A number of medical or related organizations have scheduled **scientific, business or social meetings** to be held at the time of the annual meeting of the C.M.A., which is to be held in Los Angeles, April 27 to May 1:

Saturday, April 27

California Society of Pathology—Dinner meeting, 7:00 p.m. For reservations contact Ernest Simard, M.D., Secretary, 708 Cass Street, Monterey.

American College of Chest Physicians, California Chapter—Scientific Meeting, 9:00 a.m. to 5:00 p.m., Cocoanut Grove, Ambassador Hotel. Reception, 5:00 p.m. to 8:00 p.m., Grove Lounge, Ambassador Hotel.

Sunday, April 28

Woman's Auxiliary to the California Medical Association Reception—East and West Venetian rooms—6:00-8:00 p.m.—Honoring Mrs. Donald A. Charnock, wife of the President of the C.M.A. All doctors and their wives are cordially invited.

California Society of Allergy Reception and Dinner—Dolphin Court, 6:30 p.m.

American Academy of Pediatrics, California Chapter—Meeting and dinner, Embassy Foyer, 6:30 p.m.

Monday, April 29

Bureau of Medical Economics—Variety Club Library, 10:00 a.m. to 4:00 p.m.

California Society of Allergy Luncheon—Variety Club, 12:15 p.m.

California Academy of Preventive Medicine—Meeting, Regency Room, 7:00 p.m.

Jefferson Medical Alumni Dinner—East Venetian Room, 6:30 p.m.

Tuesday, April 30

President's Dinner Dance—Cocoanut Grove, 8:00 p.m. Formal dress optional. Tickets will be on sale at the registration desk, Ballroom, Casino Floor.

C.M.A. Past Presidents' Lunch—Garden Room, 12:15 p.m.

Woman's Auxiliary Luncheon—Cocoanut Grove, 12:30 p.m.—Honoring Mrs. Paul Blaisdell and Mrs. Leonard D. Offield; Members of the State Advisory Board; and Past State Presidents.

Bureau of Medical Economics—Variety Club Library, 10:00 a.m. to 4:00 p.m.

State Board of Health—Lido Room, 9:30 a.m.

Gifts totaling more than $85,000 were received in February by the **College of Medical Evangelists School of Medicine** from two national medical foundations. A check for $46,379 came from the American Medical Education Foundation, an organization sponsored since 1952 by the American Medical Association to solicit funds from the medical profession, state and local medical societies, and interested friends of the profession.

The sum of $39,375 was received from the National Fund for Medical Education. The fund was established in 1949 by President Eisenhower, then head of Columbia University. It seeks gifts from business, industry, labor, and other segments of American society.

* * *

Officers of the **Metropolitan Dermatological Society of Los Angeles,** elected to serve for 1957, are as follows: President, Dr. Edward L. Murphy, Burbank; vice-president, Dr. Laurence J. Underwood, Glendale; secretary-treasurer, Dr. Eliot Wolk, Sherman Oaks.

* * *

A grant of $10,000 to support **research in the field of hormones** with relation to crippling diseases has been awarded by the National Society for Crippled Children and Adults to Dr. Marshall R. Urist, an orthopedic surgeon associated with the University of California at Los Angeles School of Medicine.

* * *

Under the sponsorship of the Committee on Latin American Studies of the University of California at Los Angeles, and the Committee on Exterior Affairs of the School of Medicine, University of California at Los Angeles, a series of five lectures, covering the **diseases of the connective tissue,** will be presented by Dr. Javier Robles-Gil of the Institute of Cardiology of Mexico.

The lectures, which are free to interested physicians, will be held from 7:30 p.m. to 9:00 p. m., each evening during the week April 15 through April 19, 1957, in room 13-105 in the Medical Center, Westwood Campus.

SACRAMENTO

On March 16, 1957, the **Sacramento Society for Medical Improvement,** the oldest county medical society in continuous existence in California, celebrates its 89th anniversary at the Elks Club in Sacramento. It was organized March 17, 1868.

SAN FRANCISCO

Dr. Robert R. Newell, director of the isotope laboratory and coordinator of cancer teaching at the Stanford University School of Medicine, was presented with the American College of Radiology's gold medal award for distinguished service in radiology at a banquet meeting of the College last month in Chicago. Doctor Newell is the seventeenth man to win the high honor.

* * *

The Fourth Annual Series of Medical Clinics sponsored by the **San Francisco Academy of General Practice,** will be held at the Fort Miley Veterans Administration Hospital, 42nd Avenue and Clement Street in San Francisco, beginning on Tuesday, April 16, 1957, at 8 p.m., and will continue each Tuesday evening until May 21, 1957. Dr. Alex F. Fraser will be chairman and Dr. Forrest M. Willett, Associate Professor of Medicine, Stanford University School of Medicine, will be moderator.

Newer methods of diagnosis and treatment will be emphasized and most of the subjects will vary from last year's clinics.

All physicians are invited. The fee will be $15 for Academy members, $20 for nonmembers. All interns and residents are invited without charge.

* * *

In a competition to encourage the interest of medical students in **rheumatic fever research and cardiovascular diseases,** the San Francisco Heart Association is offering two awards for a total of $300 in memorial prizes. One of the awards, to be known as the T. Duckett Jones Memorial Prize, is $100 to be offered for the best 5,000 word essay on any aspect of rheumatic fever. The competition is open to students in any of the four classes at Stanford University School of Medicine or the University of California School of Medicine. To enable preclinical students to compete with advanced medical students, the essay may be written from an anatomical, physiological, bacteriological, or pharmacological viewpoint. Competition for this award closes May 1, 1957.

The other award is the William J. and Dorothy Fish Kerr Prize of $200, to be given for the best original observation in the clinical field of cardiovascular disease embracing diagnosis and treatment. Any intern, resident or resident-fellow in the counties contiguous to San Francisco Bay, is eligible to enter. To compete for the William J. and Dorothy Fish Kerr Memorial Prize, an applicant is advised to submit a written description of the observation, together with a letter from the chief of the hospital service observed. Contest closes April 1, 1957.

Papers in both competitions should be mailed to Harold H. Rosenblum, M.D., chairman, Awards Committee, San Francisco Heart Association, 604 Mission Street, San Francisco 5.

GENERAL

The American Gastroenterological Association will be host to the **World Congress of Gastroenterologic Societies** in May, 1958. The congress will convene at the Sheraton-Park Hotel, Washington, D. C., May 25 to 31, 1958. Guest speakers from many nations will participate, as well as members of the profession from the United States. The program will be divided into five major categories: Peptic ulcer, carcinoma of the stomach, malabsorption and sprue-like states, nutrition in relation to lesions of the liver and pancreas, and infections and infestations of the alimentary tract. Modern methods of translation will enable each person attending the congress to hear the presentations in the language of his choice.

On May 30 and 31, the annual meeting of the American Gastroenterological Association will be held in the Sheraton-Park Hotel.

* * *

The 1957 meeting of the **American Goiter Association** will be held in the Hotel Statler, New York City, May 28 to 30.

* * *

The ninth annual convention of the **International Academy of Proctology** will be held in New York, April 29 to May 2, 1957. There will be special emphasis on anal and rectal panel presentations, and on newer treatment methods, as requested by those who attended the Chicago meeting in 1956, according to the official announcement.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Preventive Psychiatry in Pediatric Practice. Thursdays, March 21 through June 6. Twenty-four hours. Fee: $50.00.

Diagnosis and Management of Benign and Malignant Lesions of the Head and Neck. Wednesday, March 27. Six and one-half hours. Fee: $17.50.

Abdominal Pain. Wednesday, April 3. Six hours. Fee: $17.50.

Minor Surgery. Saturday, April 6. Six hours. Fee $25.00.

Inhalation Therapy. Wednesday, April 24. Six hours. Fee: $17.50.

Dissection of Extremities. Mondays, April 29 through June 10. Seventeen hours. Fee: $125.00.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

The Newborn. Saturday, March 23. Six hours. Fee: $12.50.

Clinical Advances in Diagnosis and Treatment of Metabolic and Endocrine Diseases. March 28 to 30. 20 hours. Fee: $50.00.

Current Cardiac Concepts and Practice. Mornings, April 1 to 5. Seventeen hours. Fee: $50.00.

Electrocardiography in Daily Practice. Afternoons, April 1 to 5. Seventeen hours. Fee: $50.00.

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Medical Ophthalmology and Ophthalmoscopy. Thursday and Friday, May 16 and 17. Fourteen hours. Fee: $60.00.

Arthritis and Rheumatic Diseases. Thursday and Friday, May 16 and 17.*

Ear, Nose, Throat, Clinics and Seminars. Friday and Saturday, May 24 and 25.*

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

*Hours and Fees to be announced.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

Postgraduate Conference in Surgery. March 18 to 22.

Postgraduate Conference in Ophthalmology. March 18 to 22.

Contact: Lowell Rantz, M.D., Director, Postgraduate Programs, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15. WEst 1-8000, Extension 207.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Physics and Clinical Application of Radioactive Isotopes. Fridays 4 to 5 p.m., March 1 to July 12, Los Angeles County Hospital and Cedars of Lebanon Hospital.

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: $65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

Audio Digest Foundation, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 1919 Wilshire Blvd., Los Angeles 57.

POSTGRADUATE INSTITUTES, 1957

San Joaquin Counties in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

North Coast Counties in cooperation with Stanford University, April 11 to 12, 1957, Santa Rosa, Veterans Memorial Auditorium. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

Sacramento Valley Counties in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

Medical Dates Bulletin

MARCH MEETINGS

Children's Hospital, San Francisco postgraduate course on The Newborn, Nurses Auditorium, 3801 Sacramento Street, March 23. *Contact:* Medical Extension, University of California Medical Center, 2nd and Parnassus, San Francisco 22.

Southern California Society of Gastroenterology dinner meeting and lecture: "Effects of Antibiotics on the Gastrointestinal Tract," Lowell Rantz, M.D., Stanford University School of Medicine. March 26, 6:30 p.m., Los Angeles County Medical Association Bldg. *Contact:* L. M. Asher, M.D., secretary, 436 North Roxbury Drive, Beverly Hills.

City of Hope Medical Center postgraduate course "Newer Advances in the Diagnosis and Treatment of Surgical Heart Disease. March 26 and 27. Fee: $15.00 for one day, $25.00 for both days. *Contact:* Julian Love, M.D., Director of Postgraduate Medicine, City of Hope Medical Center, Duarte.

Cancer Commission, California Medical Association, Cancer Conference for Tulare County Medical Society, March 28.§

California Tuberculosis and Health Association and the California Trudeau Society Joint Annual Meeting, Hotel Statler, Los Angeles, March 28 to 30, 9 a.m to 5 p.m. *Contact:* E. L. Daggett, Director, Public Information, 130 Hayes St., San Francisco 2, or telephone HEmlock 1-8771.

Cancer Commission, California Medical Association, Cancer Conference for Los Angeles County Medical Association, March 31.§

APRIL MEETINGS

Letterman Army Hospital "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.‡

Santa Clara and San Mateo County Heart Associations Postgraduate Symposium on Heart Disease. Palo Alto Community Center, 1305 Middlefield Road, April 3. *Contact:* Louise Hestwood, executive director, Santa Clara County Heart Association, 461 Porter Building, San Jose.

Cancer Commission, California Medical Association, Cancer Conference for Marin County Medical Society, April 4.§

‡ *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

International College of Surgeons, Regional Meeting, Las Vegas, Nevada, April 8 and 9. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

Cancer Commission, California Medical Association, Cancer Conference for Ventura County Medical Society, April 9.§

California Society of Anesthesiologists, Inc., Annual Meeting, Sun Valley, Idaho, April 9th. *Contact:* Francis E. Guinney, M.D., secretary, 2790 Monte Mar Terrace, Los Angeles 64.

Cancer Commission, California Medical Association, Cancer Conference for Riverside County Medical Society, April 11.*

United States-Mexico Border Public Health Association Fifteenth Annual Meeting, April 9 to 12, San Antonio, Texas. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

Valley Children's Hospital Spring Clinics, Roosevelt High Auditorium, Fresno, April 12-13. *Contact:* Valley Children's Hospital, Millbrook and Shields Avenue, Fresno.

Cancer Commission, California Medical Association, Cancer Conference for Kern County Medical Society, April 16.§

San Francisco Heart Association Nurses Institute on the Care of the Cardiac Patient, April 17 and 18, 8:30 a.m. to 5 p.m., San Francisco. *Contact:* Mr. Lawrence Kramer, Executive Director, San Francisco Heart Association, 604 Mission Street, San Francisco, or telephone: YUkon 2-5753.

Cancer Commission, California Medical Association, Cancer Conference for San Luis Obispo County Medical Society, April 20.§

Letterman Army Hospital "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

Cancer Commission, California Medical Association, Cancer Conference for Merced County Medical Society, April 25.§

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

MAY MEETINGS

California Conference of Local Health Officers. Auditorium, State Building, 217 West First Street, Los Angeles, May 2 and 3. *Contact:* Donald G. Davy, M.D., State Dept. of Public Health, 2151 Berkeley Way, Berkeley.

Cancer Commission, California Medical Association, Cancer Conference for Napa County Medical Society, May 8.§

California Heart Association Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

Western Branch, American Public Health Association annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

§*Contact:* Walter E. Batchelder, M.D., Medical Director, Cancer Commission, Suite 816, 450 Sutter St., San Francisco.

JUNE MEETINGS

Children's Hospital of the East Bay Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

State Board of Medical Examiners Oral Examination, San Francisco, June 15.*

Idaho State Medical Association 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

State Board of Medical Examiners Written Examination, San Francisco, June 17 to 20.

Wyoming State Medical Society Rocky Mountain Medical Conference Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

SUMMER AND FALL MEETINGS, 1957

Colorado Division, Cancer Society Rocky Mountain Cancer Conference, 9 a.m., July 10 and 11, Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., Chairman, 835 Republic Bldg., Denver 2.

State Board of Medical Examiners Oral Examination, Los Angeles, August 17.*

State Board of Medical Examiners Written Examination, Los Angeles, August 19 to 22.

Utah State Medical Association Annual Scientific Session, September 5 to 7, Hotel Utah, Salt Lake City, Utah. *Contact:* Harold Bowman, 42 South Fifth Street, Salt Lake City.

Saint John's Hospital Annual Postgraduate Assembly, September 12 to 14, Saint John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, Postgraduate Assembly, 22nd Street at Santa Monica Blvd., Santa Monica.

Washington State Medical Association Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

Nevada State Medical Association Annual Meeting, Las Vegas, September 25 to 28. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

San Francisco Heart Association 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

First Western Industrial Health Conference, Biltmore Hotel, Los Angeles. October 4 to 6. *Contact:* E. J. Zaik, M.D., secretary, Western Industrial Medical Association, 740 South Olive Street, Los Angeles 14.

California Society of Internal Medicine Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

California Academy of General Practice Ninth Annual Scientific Assembly, November 3 to 6, Hotel Statler, Los Angeles. *Contact:* William W. Rogers, executive secretary, 461 Market Street, San Francisco.

*Note: In regard to the dates of oral examinations, applicants are requested *NOT* to arrange to come to an oral examination until they receive a notice of the action of the Credentials Committee advising them of the time and place to appear.

INFORMATION

Recommendations for Driver Licensing

NEW DRIVER licensing requirements have been proposed by 125 leading medical specialists from the United States and Canada and traffic safety authorities in government and industry, who met at New York University May 23, 1956, for an all-day workshop conference on Medical Aspects of Motor Vehicle Accident Prevention. These recommendations, together with an analysis of research needs, are contained in the 32-page report of the proceedings, contained in full in the December 15 issue of the *New York State Journal of Medicine*.

Co-sponsored by the university's Center for Safety Education and the NYU-Bellevue Medical Center, this pioneer conference was held in cooperation with the New York Academy of Medicine's Committee on Public Health, the New York Industrial Medical Society, and several county medical societies. Dr. George E. Armstrong, vice-president for medical affairs at New York University, was conference chairman, while Dr. Herbert J. Stack, director of the Center, served as coordinator.

Among the more important conclusions and recommendations arrived at by the conference participants were the following:

Driver attitudes and personality characteristics have a major role in the causation of traffic accidents and the research in this area must be continued and intensified.

Qualifying medical examinations should be mandatory prior to the first issuance of a license to an individual and a qualifying examination should be given prior to each renewal of the license.

Fourteen cardiovascular conditions, ranging from severe diminished cardiac reserve to fixed hypertension above 180/100 mm. of mercury, were specified as disqualifying for motor vehicle operation.

Individuals subject to epilepsy and other conditions which bring about transient lapse of consciousness or loss of motor control should be periodically examined to determine their fitness to drive, and the motor vehicle commissioner should have the assistance of a panel of specialists for purposes of evaluation.

The minimum visual requirements for private car operation should be a correctible visual acuity to 20/40 Snellen in one (the better) eye and a form field of 70° in the horizontal meridian in each eye, or 140° in one eye, with vision to be reexamined every three years.

Certain conditions of the head and neck, diseases of the thoracic cage, limited functions of arms and legs, and certain conditions of the spine should be considered as precluding the safe operations of motor vehicles.

If alcohol is detected by chemical tests when a driver is involved in an accident, or if he refuses to take a test, a demerit mark should be placed on his driving record. In case of a second accident, if alcohol is again detected, or if he again refuses to take a test, the driver's license should be indefinitely suspended while the driver's drinking habits are investigated by a clinician appointed by the authorities.

Reprints of the proceedings are available from the Center for Safety Education, New York University, Washington Square, New York, at 50 cents a copy; in quantities of ten or more, 40 cents each.

X-rays and Other Ionizing Radiation

The Responsibilities of the Medical Profession

A Statement by the United Nations Scientific Committee on the Effects of Atomic Radiation

THE United Nations General Assembly, being aware of the problems in public health that are created by the development of atomic energy, established a Scientific Committee on the Effects of Atomic Radiation. This committee has considered that one of its most urgent tasks was to collect as much information as possible on the amount of radiation to which man is exposed today, and on the effects of this radiation. Since it has become evident that radiation due to diagnostic radiology and to radiotherapy constitutes a substantial proportion of the total radiation received by the human race, the committee considers it desirable to draw attention to information that has been obtained on this subject.

Modern medicine has contributed to the control of many diseases and has substantially prolonged the span of human life. These results have depended in part on the use of radiation in the detection, diagnosis and treatment of disease. There are, however, few examples of scientific progress that are not attended by some disadvantages, however slight. It is desirable therefore to review objectively the possible present or future consequences of increased irradiation of populations which result from these medical applications of radiation.

It is now accepted that the irradiation of human beings, and particularly of their germinal tissues, has certain undesirable effects. While many of the somatic effects of radiation may be reversible, germinal irradiation normally has an irreversible and therefore cumulative effect. Any irradiation of the germinal tissues, however slight, thus involves genetic damage which may be small but is nevertheless real. For somatic effects there may however be thresholds for any irreversible effects, although if so these thresholds may well be low.

The information so far available indicates that the human race is subjected to natural radiation,* as well as to artificial radiation due to its medical applications, to atomic industry and its effluents and to the radioactive fall-out from nuclear explosions. The committee is aware of the potential hazards that such radiation involves, and it is collecting and examining information on these subjects.

The amount of radiation received by the population for medical purposes is now, in certain countries, the main source of artificial radiation and is probably about equal to that from all natural sources. Moreover, since it is given on medical advice, the medical profession exercises responsibility in its use.

The committee appreciates fully the importance and value of the correct medical use of radiation, both in the diagnosis of a large number of conditions, in the treatment of many such diseases as cancer, in the early mass detection of conditions such as pulmonary tuberculosis, and in the extension of medical knowledge.

Moreover, it appreciates fully the contribution of the radiological profession, through the International Commission on Radiological Protection† in recommending maximum permissible levels of irradiation. As regards those whose occupation exposes them to radiation, the establishment of these levels depends on the view that there are doses which, according to present knowledge, do not cause any appreciable body injury in the irradiated individual; and also on the consideration that the number of people concerned is sufficiently small for the genetic repercussions upon the population as a whole to be slight. Whenever exposure of the whole population is involved, however, it is considered prudent to limit the dose of radiation received by germinal tissue from all artificial sources to an amount of the order of that received from the natural background radiation.

It appears most important therefore that medical irradiations of any form should be restricted to those which are of value and importance, either in investigation or in treatment, so that the irradiation of the population may be minimized without any impairment of the efficient medical use of radiation.

The committee is consequently anxious to receive information through appropriate governmental channels as to the methods and the extent by which such economy in the medical use of radiation can be achieved, both by avoiding examinations which are not clearly indicated and by decreasing the exposure to radiation during examinations, particularly if the gonads, or the fetus during pregnancy, lie in the direct beam of radiation. It seeks, in particular, to obtain information as to the reduction in radiation of the population which might be achieved by improvements in instrument design, by fuller training of personnel, by local shielding of the gonads, by choosing appropriately between radiography and fluoroscopy, and by better administrative arrangements to avoid unnecessary repetition of identical examinations.

The committee also seeks the cooperation of the medical profession to make possible an estimate of the total radiation received by the germinal tissue of the population before and during the childbearing age. It considers it to be essential that standardized methods of measurement, of types at present available, should be widely used to obtain this information and it emphasizes the value of adequate records, maintained by those using radiation medically, by the dental profession, and by the responsible organizations in allowing such radiation exposure to be evaluated. The committee is convinced that information of this type will make it possible to decrease the total medical irradiation of the population while preserving and increasing the true value of the medical uses of radiation.

*The radiation due to natural sources has been estimated to cause between 70 and 170 millirem of irradiation to the gonads per annum in most parts of certain countries in which it has been studied, although higher values are found locally in some areas. See the reports "The hazards to man of nuclear and allied radiations" published by the United Kingdom Medical Research Council in June 1956, in which also the millirem is defined; and from information submitted to the Committee.

†See the report of the International Commission on Radiological Protection (published in the British Journal of Radiology—Supp. 6, of December 1954—in the Journal francais d'electro-radiologie—No. 10, of October 1955—etc., and revised in 1956).

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association,** April 28-May 1, 1957, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, you will stand a much better chance of securing accommodations of your choice if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1957

Eighty-sixth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 28—MAY 1, 1957

HOTEL ROOM RATES*

	Single	Double	Twin Beds	Suites
AMBASSADOR HOTEL				
3400 Wilshire Boulevard				
Main Building	9.00-17.00		12.00-20.00	28.00-36.00
Garden Studios	15.00-21.00		22.00-26.00	38.00-48.00
CHAPMAN PARK HOTEL				
3405 Wilshire Boulevard			12.00	20.00-25.00
THE GAYLORD HOTEL				
3355 Wilshire Boulevard	7.00-9.00	10.50	11.50-12.50	18.00
HOTEL CHANCELLOR				
3191 West Seventh Street	6.00-8.00	9.00-10.00	10.00-12.00	17.00-22.00
SHERATON-TOWN HOUSE				
2961 Wilshire Boulevard	11.00-16.00		16.00-23.00	31.00

***The above quoted rates are existing rates but are subject to any change which may be made in the future.**

CALIFORNIA MEDICAL ASSOCIATION
450 Sutter Street—Room 2000
San Francisco 8, California

Please reserve the following accommodations for the 86th Annual Session of the California Medical Association, in Los Angeles April 28 - May 1, 1957.

Single Room $..... Double Bedded Room $..... Twin Bedded Room $.....

Small Suite $..... Large Suite $..... Other Type of Room $.....

First Choice Hotel..... Second Choice Hotel.....

ARRIVING AT HOTEL (date).....Hour:.....A.M.....P.M. } Hotel reservations will be held until

Leaving (date) .....Hour:.....A.M.....P.M. } 6:00 P.M., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each double room or twin bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

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Individual Requesting Reservations—Please print or type Delegate?..... Alternate?.....

Name..... County.....

Address..... City and State.....

CANCER COMMISSION
CALIFORNIA MEDICAL ASSOCIATION

Pre-Convention Conferences

LOS ANGELES • SATURDAY, APRIL 27

Radiology

Colonial Room, Ambassador Hotel

Chairman . . . . . Roy B. Weathered, M.D., Los Angeles
Secretary . . . . . Eugene G. Tainter, M.D., Sacramento

DIAGNOSTIC SESSION—9:30 a.m. to noon

Twelve diagnostic cases with histories and films will be presented. Cases have been selected to illustrate specific problems in the radiological and clinical diagnosis of cancer. Audience participation and discussion are urgently requested.

THERAPY SESSION—2:00 p.m. to 4:30 p.m.

Five cases with specific therapy problems will be presented. The audience is asked to participate actively.

Pathology

9:15 a.m. to noon • 2:00 p.m. to 4:30 p.m.

East Venetian Room, Ambassador Hotel

Moderator: HERBERT LUND, M.D., Greensboro, North Carolina

The Pre-Convention Conference on the Microscopic Pathology of Skin Cancer will be conducted under the chairmanship of Gerson R. Biskind, M.D., San Francisco.

Members who wish to attend this conference are requested to register now with Weldon K. Bullock, M.D., Registrar, Tumor Tissue Registry, C.M.A. Cancer Commission, Los Angeles County Hospital, 1200 North State Street, Los Angeles 33.

7:00 p.m.

Dinner meeting of the California Society of Pathologists. For reservations contact Ernest Simard, M.D., Secretary, 708 Cass Street, Monterey.

Cancer Commission Dinner

6:30 p.m.—Lido Room

Annual Dinner Meeting of the Cancer Commission and Advisory Committee.

CALIFORNIA
MEDICAL
ASSOCIATION

86th Annual Session

AMBASSADOR HOTEL

LOS ANGELES

April 28-May 1, 1957

Scientific Sessions

•

Meetings of the
House of Delegates

DONALD A. CHARNOCK
President

FRANK A. MacDONALD
President-elect

PROGRAM AND PRE-CONVENTION REPORTS

for the

CALIFORNIA MEDICAL ASSOCIATION

Eighty-sixth Annual Session

Ambassador Hotel, Los Angeles

April 28 to May 1, 1957

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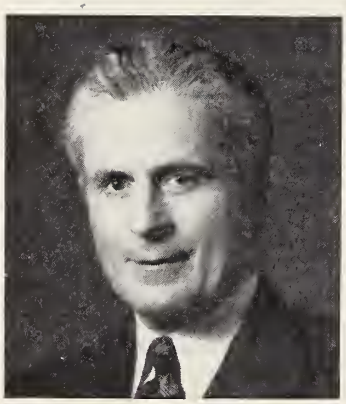
Guest Speakers

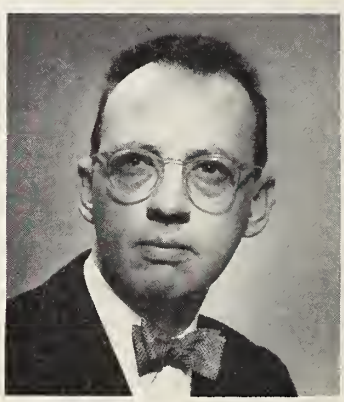
WYLAND F. LEADBETTER



SUMNER L. KOCH

CARL H. SMITH

LEMUEL W. DIGGS



FRANK H. GARDNER

Guest Speakers

Lemuel W. Diggs, M.D., Memphis, Tennessee—Professor of Medicine and Director of the Department of Medical Laboratories, University of Tennessee College of Medicine; Consultant to the Armed Forces Institute of Pathology, Washington, D. C.

Frank H. Gardner, M.D., Boston, Massachusetts—Assistant Professor of Medicine, Harvard Medical School; Senior Associate in Medicine, Peter Bent Brigham Hospital.

Sumner L. Koch, M.D., Chicago, Illinois—Professor of Surgery (Emeritus), Northwestern University Medical School.

Wyland F. Leadbetter, M.D., Boston, Massachusetts—Associate Professor of Surgery, Harvard Medical School; Chief of Urology, Massachusetts General Hospital.

Carl H. Smith, M.D., New York, New York—Professor of Clinical Pediatrics, New York Hospital, Cornell University Medical Center.

Knud Wilken-Jensen, Copenhagen, Denmark—Professor of Pediatric Allergy, University Hospital, Copenhagen—Guest of Section on Allergy.

Thomas D. Dublin, M.D., Bethesda, Maryland—Medical Director, Community Services Program, National Institutes of Health.

Information

BADGES. It is important that badges be worn at all times. Admission to scientific meetings is by badge only.

COUNCIL. Frenchette Room. The first meeting of the Council will be held Saturday, April 27 at 9:30 a.m. Further meetings will be held each morning at 7:30 a.m.

DELEGATES. For a list of delegates, meeting times and places, and agenda, see pages 45 to 47 of this program.

EMERGENCY CALLS AND MESSAGES. Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 5-1581.

EXHIBITS. Technical Exhibits — Ballroom, Sunset Room and Boulevard Room, Casino Floor. See list, pages 35 to 44.

Scientific and Organizational Exhibits—Main Lobby. See list on page 30.

Medical Motion Pictures will be shown in the Colonial Room.

You are urged to visit and attend all exhibits.

MEETING TIMES AND PLACES. See chart on page 7 for exact times and places of general and section meetings.

REGISTRATION. Registration and information desks are located at the back of the Ballroom, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Sunday, Monday, Tuesday from 9:00 a.m. to 5 p.m., and Wednesday, 9:00 a.m. to noon. *Admission to the general and section sessions and exhibit areas is by badge only.*

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION. (a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; county medical society/association or A.M.A. membership card.) (b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.) (c) Medical secretaries will be admitted upon presentation of a letter from the physician-employer. (d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer. (e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied public health personnel, and others will be admitted provided they have proper identification. (f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

Other Meetings and Entertainment

• SUNDAY, APRIL 28

Woman's Auxiliary to the California Medical Association Reception—East and West Venetian rooms—6:00-8:00 p.m.—Honoring Mrs. Donald A. Charnock, wife of the President of the C.M.A. All doctors and their wives are cordially invited.

California Society of Allergy Reception and Dinner—Dolphin Court, 6:30 p.m.

American Academy of Pediatrics, California Chapter—Meeting and dinner, Embassy Foyer, 6:30 p.m.

• MONDAY, APRIL 29

Bureau of Medical Economics—Variety Club Library, 10:00 a.m. to 4:00 p.m.

California Society of Allergy Luncheon—Variety Club, 12:15 p.m.

California Academy of Preventive Medicine—Meeting, Regency Room, 7:00 p.m.

• MONDAY, APRIL 29 *(continued)*

Jefferson Medical Alumni Dinner—East Venetian Room, 6:30 p.m.

• TUESDAY, APRIL 30

PRESIDENT'S DINNER DANCE—Cocoanut Grove, 8:00 p.m. Formal dress optional. Tickets will be on sale at the registration desk, Ballroom, Casino Floor.

C.M.A. Past Presidents' Lunch—Garden Room, 12:15 p.m.

Woman's Auxiliary Luncheon—Cocoanut Grove, 12:30 p.m.—Honoring Mrs. Paul Blaisdell and Mrs. Leonard D. Offield; Members of the State Advisory Board; and Past State Presidents.

Bureau of Medical Economics—Variety Club Library, 10:00 a.m. to 4:00 p.m.

State Board of Health—Lido Room, 9:30 a.m.

SCIENTIFIC SESSIONS

	SUNDAY APRIL 28		MONDAY APRIL 29		TUESDAY APRIL 30		WEDNESDAY MAY 1	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
EMBASSY	**9:30 a.m.** **House of Delegates**		**9:00** General Surgery Internal Medicine	**2:00** **General Meeting**	**9:00** Internal Medicine	**2:00** **Clinical-Pathological Conference** **3:30** **General Meeting**	**9:30 a.m.** **House of Delegates**	
WEST VENETIAN	**9:00** Industrial Medicine and Surgery	**2:00** Internal Medicine					**9:00** Urology	**2:00** Urology
EAST VENETIAN	**9:00** Pathology	**2:00** Radiology	**9:00** General Practice Industrial Medicine and Surgery		**9:00** General Surgery		**9:00** General Surgery	**2:00** Public Health Psychiatry and Neurology
FRENCH	**9:00** Radiology Orthopedics	**2:00** Allergy Pediatrics	**9:00** Pediatrics		**9:00** Obstetrics and Gynecology			
GROVE LOUNGE	**9:00** Pediatrics	**2:00** Eye	**9:00** Radiology		**9:00** General Practice		**9:00** Public Health	
REGENCY	**9:00** Ear, Nose and Throat	**2:00** Orthopedics	**9:00** Allergy		**9:00** Psychiatry and Neurology			**2:00** Anesthesiology
COLONIAL	**9:00** Dermatology	**2:00 to 6:00** **7:00 to 11:00** Medical Motion Pictures	**9:00 a.m. to 1:30 p.m.** Medical Motion Pictures	**7:00 to 11:00** Medical Motion Pictures	**9:00 a.m. to 1:30 p.m.** Medical Motion Pictures	**7:00 to 11:00** Medical Motion Pictures	**9:00 a.m. to 1:30 p.m.** Medical Motion Pictures	

COUNCIL OF THE C.M.A. MEETS DAILY AT 7:30 A.M. IN THE FRENCHETTE ROOM

TECHNICAL EXHIBITS—Sunset Room, Ballroom, Boulevard Room, Casino Floor

SCIENTIFIC EXHIBITS—Lobby

REFERENCE COMMITTEE:

No. 1—Monday ..... Lido Room
Tuesday ..... Variety Club
No. 2—Monday ..... Room 127
Tuesday ..... Room 127
No. 3—Monday morning ..... Dolphin Court
Monday afternoon ..... East Venetian Room
Tuesday morning ..... Dolphin Court
Tuesday afternoon ..... East Venetian Room
No. 4—Monday ..... Garden Room
Tuesday ..... Room 132
C.P.S.—Monday ..... Rose Room
Tuesday ..... Rose Room

SCIENTIFIC SESSIONS

General Meetings

First General Meeting

MONDAY, APRIL 29

2:00—Embassy Room

Chairman: Donald A. Charnock, M.D., Los Angeles

2:00—**Address of Welcome**—Donald A. Charnock, President of the California Medical Association.

Symposium on Bleeding

2:10—**Problems in the Management of Gastrointestinal Bleeding**—Clarence J. Berne, M.D., Los Angeles.

2:30—**Management of Bleeding Emergencies in Infancy and Childhood**—Carl H. Smith, M.D., New York, New York, by invitation.

2:50—**Problems of Genitourinary Bleeding**—Wyland F. Leadbetter, M.D., Boston, Massachusetts, by invitation.

3:10—**Coagulation Defects and the Bleeding State**—Lemuel Diggs, M.D., Memphis, Tennessee, by invitation.

3:30—**Iron Metabolism in Chronic Blood Loss**—Frank H. Gardner, M.D., Boston, Massachusetts, by invitation.

3:50—Recess.

4:00— **Panel Discussion**

Practical Problems in the Management of the Bleeding State

Moderator: Gurth Carpenter, M.D., Los Angeles

Members of the Panel: Carl H. Smith, M.D., New York; Lemuel Diggs, M.D., Memphis; Frank H. Gardner, M.D., Boston; and Wyland F. Leadbetter, M.D., Boston.

Second General Meeting

TUESDAY, APRIL 30

2:00—Embassy Room

2:00— **Panel Discussion**

Problems in Organ and Tissue Transplantation

Moderator: Victor Richards, M.D., San Francisco

Members of the Panel: Sumner L. Koch, M.D., Chicago; Frank H. Gardner, M.D., Boston; Wyland F. Leadbetter, M.D., Boston; and Carl H. Smith, M.D., New York.

3:20—Recess.

3:30— **Clinical-Pathological Conference**

Moderator: Thomas H. Brem, M.D., Los Angeles

3:30—Case No. 1—Clinician: Morton H. Maxwell, M.D., Los Angeles; Discussant: Telfer B. Reynolds, M.D., Los Angeles.

4:15—Case No. 2—Clinician: Lemuel W. Diggs, M.D., Memphis, Tennessee, by invitation; Pathologist: Hugh A. Edmondson, M.D., Los Angeles.

For complete Case Histories, see opposite page

VISIT THE TECHNICAL AND SCIENTIFIC EXHIBITS

Clinical-Pathological Conference

Following are the cases to be presented at the Clinical-Pathological Conference
Embassy Room, Tuesday, April 30, at 3:30 p.m.

3:30—CASE No. 1:

This patient, a 41-year-old Caucasian housewife, was referred to the Los Angeles County General Hospital Communicable Disease Unit on June 6 as a possible bulbar poliomyelitis. Seven days previously she had noted moderate weakness of the leg muscles which had gradually increased, and three days later the arms became weak. The weakness increased until the day before entry when she was unable to get out of bed and the sensation of "not getting enough air" was noted. A physician was then called who recommended hospitalization immediately.

There had been no fever, headache, or pain. She was mildly nauseated in the 48 hours prior to admission and had eaten little, but there was no vomiting or diarrhea. She had taken no medication of any sort.

She had had no serious illnesses in the past and had never experienced an episode like the present one. For about 6 months, however, she had noticed occasional weakness of the legs when climbing stairs or stepping up on street curbing.

The family history was noncontributory.

Her weight had been stable at approximately 140 pounds for several years. Menstrual periods were still regular though scanty. There were no complaints elicited relative to any organ system.

At the time of admission to the hospital she was unable to move any part of her body except her head, which she could raise with difficulty. She was calm and did not seem hysterical. The limbs were flaccid and the deep tendon reflexes were diminished. Sensation seemed intact, however. She could move her eyes, swallow, and talk normally, but respirations were shallow and the vital capacity was only 700 cc. Her temperature was 98°F., blood pressure 130/75, and pulse rate 90 per minute. She was approximately 63 inches tall and was mildly obese. No abnormalities were noted on physical examination except those listed above.

ADMISSION LABORATORY WORK

Blood: Hemoglobin 14 gm. per 100 cc. White blood cells 16,000 per cubic millimeter with 72 per cent polymorphonuclears. *Urinalysis:* Specific gravity 1.014, pH 2.0, albumin negative, sugar negative, acetone negative, microscopic negative. *Spinal puncture* pressure 130 mm., dynamics normal. The fluid was clear with a negative Pandy test and no cells on microscopic examination.

Course: One and one-half milligrams of prostigmine hypodermically had no effect upon the muscle weakness. Four hours after entry there was no improvement and respirations were more rapid and shallow. Chemical tests could not be obtained immediately, so a blood sample was withdrawn and centrifuged and oral potassium chloride therapy begun (2 gm. every 2 hours). Improvement was rapid and by morning (after 10 gm. potassium chloride) the patient felt normal in every respect. Deep reflexes were active and the vital capacity had increased to 3,500 cc. Serum chemical values were nonprotein nitrogen 41 mg. per 100 cc.; sodium 149, potassium 2.6, magnesium 2 and bicarbonate 15 mEq. per liter; and sugar 117 mg. per 100 cc. The serum that was obtained before treatment had been instituted contained 1.4 mEq. per liter of potassium. Forty hours after entry the serum potassium level was 3.8 mEq. per liter. During this period she received 296 mEq. of potassium orally (as potassium chloride) in addition to a small amount of food, and the urine contained a total of 67 mEq. of potassium.

FURTHER STUDIES

A number of tests were performed during the subsequent two weeks of hospitalization in an effort to establish a diagnosis.

1. A crude potassium balance study was performed by giving a constant weighed diet calculated (standard food tables) to contain 25 mEq. potassium daily. During the five days of consumption of this diet, 24-hour urine volume ranged from 1,400 to 2,000 cc. with a potassium content of from 30 to 39 mEq. daily. Total negative potassium balance for the five days was 43 mEq. Serum potassium fell from 4.0 to 3.25 mEq. per liter.

2. Two attempts were made to precipitate paralysis. (a) 300 gm. glucose was given orally. Serum potassium before glucose was 4.5 mEq. per liter. Two and one-half hours later it was 4.2 mEq. per liter and there was no muscle weakness. (b) 200 gm. glucose was given orally and 15 minims of adrenalin injected hypodermically without any change in muscle strength.

3. Renal function tests: Repeated urinalyses—negative for sugar, albumin, and on microscopic examination. Concentration test (18 hours)—specific gravity 1.020. Intravenous pyelogram—"prompt bilateral excretion of contrast medium with normal pyeloureteral silhouettes." Phenolsulfonphthalein—appearance time 3 minutes. In one hour 65 per cent of the dye was excreted. Inulin clearance—70 to 90 cc. per minute.

4. Serum potassium varied between 4.2 and 3.2 mEq. per liter on the numerous occasions it was tested. Other biochemical measurements on June 20 were: Sodium 144, bicarbonate 19, calcium 5.2, and phosphate 2.5 mEq. per liter; nonprotein nitrogen 34 mg. per 100 cc., and protein bound iodine 3.1 micrograms per 100 cc.

5. X-rays of the spine and skull were interpreted as normal.

On June 22 the patient was discharged without any diagnosis having been established. She was advised to take supplementary potassium orally. During the subsequent 12 months she had no further attacks of muscle weakness.

4:15—CASE No. 2:

The patient, a 44-year-old colored laborer, was admitted to the hospital on June 20, 1955, because of severe and persistent nose bleeds for several days. For three days he had felt feverish and "sick all over." Also he had noticed that his urine had been darker than usual. There had been no abdominal pain, nausea, vomiting, or cough.

The story of the present illness was not considered adequate because the patient was confused and incoherent on admission.

He had had two previous admissions in 1951 and 1953 because of swollen painful knee and ankle joints with fever, occurring in episodes and originating in 1949 in the right big toe. The serum uric acid was elevated on several occasions (6.3, 9.2, and 11 mg. per 100 cc.). He was considered to have gout but was given no specific treatment for it because the symptoms and signs subsided quickly on bed rest and salicylates. On these admissions a small 1 x 1 cm. hazy density in the left second interspace was seen repeat-

edly on chest films. It did not change in appearance between 1951 and 1953. Tuberculin tests and sputum cultures for acid fast bacilli were negative, but the coccidioidin skin test was 2-plus. He had previously worked in the cotton fields near Bakersfield, California. His serologic tests for syphilis were positive in 1945 and again in 1951. He was given 1.2 million units of penicillin daily for seven days, and thereafter his serologic test for syphilis became negative and remained so through his final admission.

Throughout the years he had been a heavy drinker, having at times consumed upward of a pint of whisky or vodka daily.

He was followed irregularly in the outpatient department because of his joint symptoms. They appeared to respond well to colchicine. Another tuberculin skin test in March of 1954 was again negative and the coccidioidin test 2-plus.

The physical examination disclosed a poorly nourished negro male who appeared debilitated and confused but not acutely ill. Blood pressure 110/80, temperature 101, pulse 120 and respiration 22. There was no scleral icterus. The pupils responded normally. Examination of the optic fundi was inadequate because of poor cooperation. There was no lymphnode enlargement and the neck was supple. The lungs were clear and the heart appeared normal except for tachycardia. The abdomen was mildly distended but shifting dullness could not be demonstrated. The liver was down four fingers below the right costal margin. It was somewhat tender. The spleen could not be palpated. There was diffuse abdominal tenderness but no rigidity or rebound tenderness. The rectal examination was normal. There was no edema and the neurological examination was normal except for a tremulousness of the extremities.

The initial blood studies revealed a moderate anemia with a hemoglobin of 10 grams and a white blood count of 5,000 with a preponderance of polymorphonuclears. The urine contained 20 to 25 white blood cells per high power field but no sugar or protein. The stool was negative for occult blood.

The initial chest film was considered within normal limits except for the small density in the left second interspace which had not changed appreciably. The diaphragms were thought to be a bit high. On fluoroscopy, however, they moved adequately with respiration.

The patient was considered to have impending hepatic coma and a urinary tract infection, and was started on intravenous fluids, vitamin K, and gantrisin. The pus cells in the urine cleared and the patient's general state improved a bit but the fever continued, fluctuating between 101°F. and 103°F. every day. Tetracycline was added after four days, but the fever continued. Penicillin was then added without effect, and subsequently streptomycin was given in addition for five days, also without effect. On July 2 all antibiotics were discontinued and chloroquine was administered for nine days, but the fever continued unabated. Throughout the rest of July and August the fever continued, frequently spiking to 104°F. Numerous physical examinations, laboratory, and x-ray studies failed to provide a clue. (The tests are summarized below.) Atrophy of the muscles of the legs occurred and patellar and ankle jerks could not he elicited. The biceps and triceps reflexes were hypoactive. Vibratory sense was likewise absent in the legs below the knees, but pain and touch were intact. He developed severe pain on motion of the left hip. X-rays of the joint were normal. Uric acid was 7.9 mg. The white blood count ranged from 8,000 to 9,500, occasionally rising to 13,000, with polymorphonuclears constituting about 80 per cent. No abnormal white cells were seen. The hemoglobin remained throughout between 9.6 and 10.5 grams. There was no sickling of the red cells.

A liver biopsy was interpreted as representing portal cirrhosis with mild degree of fatty metamorphosis. Numerous hlood cultures were negative. The complement fixation test for coccidioidomycosis was negative. Urine and sputum cultures for acid fast bacilli were likewise negative. Repeated electrocardiograms showed only sinus tachycardia, left axis deviation, and T-wave lowering. A chest film on August 11 showed a patchy infiltration throughout the right mid and lower lung field which had not been present before. A spinal puncture produced bloody fluid which contained no visible white cells and a protein content of 41 mg. per 100 cc. Culture was negative. Large numbers of pus cells reappeared in the urine from time to time and proteus, E. coli, and Staph. albus were cultured. He developed decubitus ulcers over the malleoli and deteriorated steadily. He eventually became more confused, stuporous, and on August 22, 1955, two months after admission, he died.

LABORATORY STUDIES

Blood Chemistries

June 21:
- Blood urea nitrogen, 23 mg. per 100 cc.
- HCO_3, 28 mEq. per liter
- Icterus index, 11 units
- Thymol turbidity, 3 units
- Cephalin flocculation, 1-plus

June 27:
- Blood urea nitrogen, 23 mg. per 100 cc.
- Alkaline phosphatase, 5.5 Bodansky units
- Albumin, 3.6 gm. per 100 cc.
- Globulin, 3.4 gm. per 100 cc.
- Icterus index, 6 units
- Acid phosphatase, 1.1 King-Armstrong units

July 1:
- Thymol turbidity, 3 units
- Cephalin flocculation, negative

July 8:
- Prothrombin, 150%
- Bromsulfalein, 18% retention

July 26:
- Uric acid, 7.9 mg. per 100 cc.
- Blood urea nitrogen, 16 mg. per 100 cc.

August 5—Glucose tolerance test:
- Fasting, 100 mg.
- 30 min., 172 mg.
- 60 min., 216 mg.
- 120 min., 214 mg.
- 180 min., 164 mg.

August 10:
- Albumin, 3.4 gm. per 100 cc.
- Globulin, 3.7 gm. per 100 cc.
- Thymol turbidity, 6 units
- Cephalin flocculation, 3-plus

August 18:
- Bromsulfalein, 25% retention

Bacteriological and Serological

June 24—Blood culture—negative. Urine culture—paracolon organism sensitive to streptomycin and chloramphenicol.

June 27—Blood culture—negative.

June 28—Urine culture—Staph. albus—Coagulase negative.

June 29—Urine culture for acid fast bacilli—negative.

July 12—Complement fixation for coccidioidomycosis—negative.

July 21—Complement fixation for coccidioidomycosis—negative.

August 16—Serologic tests for syphilis on blood and spinal fluid—negative.

X-ray Studies

June 24—Chest—Diaphragms somewhat elevated. 2 cm. hazy density left second interspace.

July 13—Chest—Lungs clear except for lesion in left upper previously seen. No change since 1953.

Abdomen—Renal and psoas shadows normal. Small amount of small bowel gas.

August 4—Intravenous pyelogram—Prompt bilateral excretion. Right well visualized and normal. Several calices on left incompletely outlined. Some narrowing of infundibula which may be on the basis of spasm, although it could be produced by inflammation.

GENERAL SURGERY

Chairman.....Orville F. Grimes, M.D., San Francisco
Secretary.....W. Kenneth Jennings, M.D., Santa Barbara
Assistant Secretary.....Edwin G. Clausen, M.D., Oakland

ORVILLE F. GRIMES
Chairman

W. KENNETH JENNINGS
Secretary

MONDAY, APRIL 29

9:00—Embassy Raam

Joint Meeting with Sectian an Internal Medicine

For Program, see Section on Internal Medicine

TUESDAY, APRIL 30

9:00—East Venetian Raam

9:00—**Intestinal Obstruction in Acute Appendicitis**—William Russell Smith, M.D., Los Angeles.

9:20—**Gallstone Obstruction of the Intestine**—Frank A. Rogers, M.D., Whittier; and Paul R. Carter, M.D., Olive View, by invitation.

9:40—**Postoperative Bile Peritonitis**—John R. Rydell, M.D., Santa Barbara.

10:00—**Observations in 103 Consecutive Cases of Acute Cholecystitis**—Phillips Johnson, M.D., San Francisco, and Myron Close, M.D., San Francisco, by invitation.

10:30—**Chairman's Address**—Orville F. Grimes, M.D., San Francisco.

11:00—**Treatment of Paralytic Ileus Without the Use of Gastric Suction**—Alex Gerber, M.D., Alhambra.

11:20—**Pancreaticojejunostomy in the Treatment of Chronic Relapsing Pancreatitis**—Irving L. Lichtenstein, M.D., Beverly Hills.

11:40—**Marginal Peptic Ulcer in the Elderly Patient**—C. E. Stafford, M.D., and D. B. Hinshaw, M.D., Los Angeles.

WEDNESDAY, MAY 1

9:00—East Venetian Raam

9:00—**Emergency Surgery in the Newborn**—David B. Sheldon, M.D., Los Angeles.

9:20—**Arterial Occlusion in the Lower Extremity**—Harold P. Totten, M.D., Inglewood.

9:40—**Indications for and Results of Arterial Grafting Operations in Peripheral Arteriosclerosis**—Edwin J. Wylie, M.D., and Joseph S. McGuinness, M.D., San Francisco.

10:00—**The Prognosis of Untreated Arteriosclerotic Aneurysm of the Abdominal Aorta in Los Angeles**—Edward Shapiro, M.D., Beverly Hills.

10:20—**Business Meeting and Election of Officers.**

10:30—**The Immediate Surgical Treatment of Injuries of the Hand**—Sumner L. Koch, M.D., Chicago, Illinois, by invitation.

11:00—**The Surgical Treatment of Pharyngoesophageal Diverticula**—Orville F. Grimes, M.D., and Frederick M. Binkley, M.D., San Francisco.

11:20—**Safeguards in Lower Esophageal Surgery**—Donald F. Rowles, M.D., Palo Alto.

11:40—**The Role of Splenectomy in the Blood Dyscrasias**—E. J. Joergenson, M.D., Glendale, and Morton M. Woolley, M.D., Boston, Massachusetts, by invitation.

INTERNAL MEDICINE

Chairman.....Harold C. Sox, M.D., Palo Alta
Secretary.....Danald W. Petit, M.D., Pasadena
Assistant Secretary.....Allen T. Hinman, M.D., San Francisca

HAROLD C. SOX
Chairman

DONALD W. PETIT
Secretary

SUNDAY, APRIL 28

2:00—West Venetian Raam

2:00—**Results of Liver Biopsy Studies**—Ira H. Wilson, M.D., San Diego.

2:20—**Further Observation Regarding the Role of Essential Fatty Acids in Lipid Metabolism**—Laurance W. Kinsell, M.D., Oakland.

2:40—**Hypothyroidism—A Common Illness in Older Men?**—Robert W. Lowrey, M.D., Glendale, and Paul Starr, M.D., Pasadena.

3:00—**The Malabsorption Syndrome**—Frank Gardner, M.D., Boston, Mass., by invitation.

3:30—**Intermission.**

3:40—**Chairman's Address: Confusion in the Kitchen**—Harold C. Sox, M.D., Palo Alto.

3:55—**Business Meeting.**

4:00—**Nephrosis and Hypothyroidism**—Robert Boyd, M.D., Pasadena.

4:20—**The Long-Term Medical Management of Surgically Adrenalectomized Patients**—Benjamin Simkin, M.D., Los Angeles.

4:40—**Acute Nonspecific Pericarditis: Case Reports with Elevated Serum Glutamic Oxalacetic Transaminase Activity**—Robert B. Kalmansohn, M.D., and Richard W. Kalmansohn, M.D., Los Angeles.

MONDAY, APRIL 29

9:00—Embassy Roam

Jaint Meeting with Sectian an General Surgery

9:00—**Acquired Resistance to Antibiotics**—William L. Hewitt, M.D., Los Angeles.

9:20—**Clinical Evaluation of Electrolyte Disturbance**—William S. Adams, M.D., Los Angeles.

9:40—**Problems of Multiple Transfusions**—Frank H. Gardner, M.D., Boston, Mass., by invitation.

10:00—**Basic Surgical Techniques in the Burned Patient**—Sumner L. Koch, M.D., Chicago, Ill., by invitation.

10:20—**Recess.**

10:40— **Panel Discussion**

Management of Burns

Moderator: Orville F. Grimes, M.D., San Francisco

Members of the Panel: Sumner L. Koch, M.D., Chicago; George Webster, M.D., Pasadena; Frank H. Gardner, M.D., Boston; William L. Hewitt, M.D., and William S. Adams, M.D., Los Angeles.

BRING PROPER IDENTIFICATION FOR REGISTRATION

TUESDAY, APRIL 30

9:00—Embassy Room

9:00—**Sarcoidosis and Renal Insufficiency Resembling Hyperparathyroidism: Report of a Case**—Edward W. Hauch, M.D., and R. L. Fisher, M.D., Pomona.

9:20—**Adenocarcinoma of the Lung Treated with X-ray and Nitrogen Mustard**—Joseph J. Arons, M.D., San Rafael.

9:40—**A Critical Evaluation of Intermittent Positive Pressure Breathing Therapy**—Roger H. L. Wilson, M.D., San Francisco.

10:00—**The Treatment of Diabetes Mellitus in 1957**—William W. H. Pote, M.D., Los Angeles.

10:30—**Intermission.**

10:50—**Clinical Effects of Tri-iodothyronine in Patients with Suboptimal Response to Desiccated Thyroid**—Stanley Newman, M.D., Major, MC, U. S. Army, by invitation, and Roberto F. Escamilla, M.D., San Francisco.

11:10—**Is the Ban of Aminopyrine (Pyramidon®) Justified?**—Julius Bauer, M.D., Los Angeles.

11:30—**Multiple Myeloma — A Clinicopathological Evaluation**—Edward E. Harnagel, M.D., Los Angeles.

PRESIDENT'S DINNER DANCE

TUESDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel, 8:00 p.m.

Formal dress optional

Tickets will be on sale in the Main Lobby

ROOM DIRECTORY

C.M.A. Office . . . . . Rooms 125-126

REFERENCE COMMITTEE ROOMS

Reference Committee No. 1—Reports of Officers, Council Commissions, Standing and Special Committees:
Monday . . . . . Lido Room Tuesday . . . . . Variety Club

Reference Committee No. 2—Finance—Reports of Secretary-Treasurer, Executive Secretary and Budget:
Monday and Tuesday . . . . . Room 127

Reference Committee No. 3—Resolutions, New and Miscellaneous Business:
Monday Morning . Dolphin Court Monday Afternoon, E. Venetian Rm.
Tuesday Morning . Dolphin Court Tuesday Afternoon, E. Venetian Rm.

Reference Committee No. 4—Amendments to the Constitution and By-Laws:
Monday . . . . Garden Room Tuesday . . . . . Room 132

Reference Committee on C.P.S. Business:
Monday and Tuesday . . . . . Rose Room

GENERAL PRACTICE

Chairman.....T. Jackson Laughlin, M.D., North Hollywood
Secretary.....Thomas N. Elmendorf, M.D., Willows
Assistant Secretary.....Howard E. Horner, M.D., Los Angeles

T. JACKSON LAUGHLIN
Chairman

THOMAS N. ELMENDORF
Secretary

MONDAY, APRIL 29

9:00—East Venetian Room

Joint Meeting with Section on Industrial Medicine and Surgery

For Program, see Section on Industrial Medicine and Surgery

TUESDAY, APRIL 30

9:00—Grove Lounge

9:00—**Emphysema: More Than an X-ray Diagnosis**—Seymour M. Farber, M.D., San Francisco.

9:20—**The Diagnostic Significance of Lateral Tumors of the Neck**—Ian Macdonald, M.D., Los Angeles.

9:40—**The Management of a Lump in the Breast**—Herbert Willy Meyer, M.D., San Diego.

10:10— **Panel Discussion**

The Generalist's Role in the Diagnosis and Treatment of Gynecological Malignancies

Moderator: Edward G. Jones, M.D., Pomona

Members of the Panel:

Gynecologist: Edward G. Jones, M.D., Pomona.
Pathologist: Louisa Keasbey, M.D., Los Angeles.
Radiologist: Lowell S. Goin, M.D., Los Angeles.

11:30—**Business Meeting and Election of Officers.**

REGISTRATION

Registration and information desks are located at the back of the Ballroom, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Sunday, Monday, Tuesday, from 9:00 a.m. to 5:00 p.m., and Wednesday, 9:00 a.m. to noon. *Admission to the general and section sessions and exhibit areas is by badge only.*

ALLERGY

Chairman.....Ben C. Eisenberg, M.D., Huntington Park
Vice-Chairman.....Willard S. Small, M.D., Pasadena
Secretary..... William J. Kerr, Jr., M.D., San Rafael

BEN C. EISENBERG
Chairman

WILLIAM J. KERR, JR.
Secretary

SUNDAY, APRIL 28

2:00—French Room

Joint Meeting with Section on Pediatrics

2:00— **Panel Discussion**

Pediatric and Adult Allergy

Moderator: Ben C. Eisenberg, M.D., Huntington Park

Members of the Panel: William C. Deamer, M.D., San Francisco; William J. Kerr, Jr., San Rafael; Hyman Miller, M.D., and George Piness, M.D., Beverly Hills; and Knud Wilken-Jensen, M.D., Copenhagen, Denmark, by invitation.

3:30—**The Allergic Implications of Blood Disorders in Infancy and Childhood**—Carl H. Smith, M.D., New York, N. Y., by invitation.

4:00—**The use of ACTH and Steroids in Allergic Diseases of Children**—Sheldon C. Siegel, M.D., Los Angeles, and Bailey J. Lovin, Jr., M.D., Los Angeles, by invitation.

4:30—**The Diagnosis and Treatment of Allergic Children**—Knud Wilken-Jensen, M.D., Copenhagen, Denmark, by invitation.

MONDAY, APRIL 29

9:00—Regency Raam

9:00—**Asthma Precipitated by Cardiac Failure**—Harry Weiner, M.D., Los Angeles.

9:30—**Management of Pulmonary Emphysema**—William S. Gevurtz, M.D., Huntington Park.

10:00—**Effect of Cigarette Smoke on Pulmonary Function Measurements**—Hurley L. Motley, M.D., Los Angeles.

10:30—**Chairman's Address: Allergy and the Atomic Age**—Ben C. Eisenberg, M.D., Huntington Park.

11:00—**The Treatment of House Dust Allergy in Children—A Comparison of Small and Large Doses of Extract in Cases of Asthma**—Walter R. MacLaren, M.D., Pasadena; and Gene B. Haber, M.D., Hollywood.

11:30—**Chronic Ulcerative Colitis and Regional Enteritis Responding to Antiallergic Therapy**—Albert H. Rowe, M.D., Oakland.

12:15—Variety Club

12:15—**Luncheon Meeting—Sponsored jointly by the Section on Allergy and the California Society of Allergy.**

BRING PROPER IDENTIFICATION FOR REGISTRATION

ANESTHESIOLOGY

Chairman . . . . . Robert W. Churchill, M.D., Sonto Rosa
Secretary . . . . . Howard S. Downs, M.D., Glendale
Assistant Secretary . . . . . John S. Hattox, Jr., M.D., San Diego

ROBERT W. CHURCHILL
Chairman

HOWARD S. DOWNS
Secretary

WEDNESDAY, MAY 1

2:00—Regency Room

2:00—**The Anesthesiologist's Role in the Prevention of Cardiac Arrest**—H. Ward Bissonnette, M.D., Los Angeles.

2:20—**The Problem of Regurgitation and Aspiration During Anesthesia**—Max W. Lincoln, M.D., San Jose.

2:40—**Serum Transaminase Studies During Fluoromar® Anesthesia**—Verne L. Brechner, M.D., Los Angeles, by invitation.

3:00—**Present Day Anesthesiology in India**—Bernard Briggs, M.D., Loma Linda.

3:20—**Endotracheal Anesthesia in Children**—George B. Lewis, M.D., Los Angeles.

3:40—**Business Meeting and Election of Officers.**

4:00— **Panel Discussion**

Anesthesia for the Aged Patient

Moderator: Judson S. Denson, M.D., Los Angeles

Members of the Panel:

Urologist: Joseph C. Hayward, M.D., San Diego.
Surgeon: Robert S. Pollack, M.D., San Francisco.
Internist: Willard S. Zinn, M.D., Altadena.
Anesthesiologist: Robert Clarke, M.D., San Francisco.

RECEPTION
WOMAN'S AUXILIARY TO THE C.M.A.

SUNDAY, APRIL 28, 6 to 8 P.M.

East and West Venetian Rooms

Honoring Mrs. Donald A. Charnock

All doctors and their wives are cordially invited

DERMATOLOGY AND SYPHILOLOGY

Chairman.....Ervin Epstein, M.D., Oakland
Vice-Chairman.....Milton Stout, M.D., Los Angeles
Secretary.....Edwin M. Hamlin, M.D., Fresno
Assistant Secretary.....Daniel J. Perry, M.D., Santa Manica

ERVIN EPSTEIN
Chairman

EDWIN M. HAMLIN
Secretary

SUNDAY, APRIL 28

9:00—Calanial Room

9:00—**The Skin Problems of the Lower Extremity Amputee**—S. William Levy, M.D., San Francisco, and Gilbert Barnes, M.D., Larkspur.

Discussion by Douglas Tofflemeier, M.D., Oakland.

9:20—**A Study of the Effect of Drugs on the Galvanic Skin Response in Acrosclerosis**—Daniel J. Perry, M.D., Santa Monica; Edwin Wright, M.D., Los Angeles; and George E. Mount, Ph.D., and Carlyn Halde, M.D., Los Angeles, both by invitation.

Discussion by Nelson Paul Anderson, M.D., Los Angeles.

9:40—**Chairman's Address: Extracutaneous Manifestations of Kaposi's Sarcoma**—Ervin Epstein, M.D., Oakland.

10:00—**Recent Developments in Surgical Skin Planing**—Samuel Ayres, III, M.D., Los Angeles; Ralph Luikart, II, M.D., Santa Barbara; and J. Walter Wilson, M.D., Los Angeles.

Discussion by Gilbert Beirne, M.D., San Francisco.

10:20—**Recess.**

10:30—**Black Hairy Tongue: A Clinical, Pathological and Therapeutic Study**—Louis H. Winer, M.D., Beverly Hills.

Discussion by Rees B. Rees, M.D., San Francisco.

10:50—**The Natural History of Mycosis Fungoides**—Eugene M. Farber, M.D., and Harold M. Schneidman, M.D., San Francisco.

Discussion by Byron Hall, M.D., San Francisco.

11:10—**Biopsy of Black Lesions**—S. William Becker, M.D., Long Beach, by invitation.

Discussion by Walter R. Nickel, M.D., San Diego.

11:30—**Business Meeting and Election of Officers.**

TWO GENERAL MEETINGS

MONDAY, APRIL 29, and TUESDAY, APRIL 30

Each Afternoon—2 to 5 p.m.

Embassy Room, Ambassador Hotel

EAR, NOSE AND THROAT

Chairman.....Gordon McCoy, M.D., San Francisco
Secretary.....Seymour Brockman, M.D., Los Angeles
Assistant Secretary.....Walter E. Heck, M.D., San Francisco

GORDON McCOY
Chairman

SEYMOUR BROCKMAN
Secretary

SUNDAY, APRIL 28

9:00—Regency Room

9:00—**Stapes Mobilization**—Victor Goodhill, M.D., Los Angeles.
Discussion.

9:30—**Surgical Reconstruction of Sound Conduction of the Middle Ear**—Emery Pick, M.D., Los Angeles.
Discussion.

10:00—**Secretory Otitis Media**—Bruce A. Sanderson, M.D., San Diego.
Discussion.

10:30—**Vogt-Koyanagi Syndrome**—Thomas L. Soss, M.D., San Mateo.
Discussion.

11:00—**Recognition and Treatment of Superior Laryngeal Neuralgia**—William F. Baxter, M.D., Oakland.
Discussion.

11:30—**Method for Continuous Measurement of Surgical Blood Loss**—Frederic Borden, M.D., San Jose.
Discussion.

12:00—**Business Meeting and Election of Officers.**

EMERGENCY CALLS AND MESSAGES

Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 5-1581.

EYE

Chairman.....Channing W. Hale, M.D., Pomono
Secretary.....Harold B. Alexander, M.D., Santa Barbara
Assistant Secretary.....O. Ralph Tonner, M.D., Palo Alto

CHANNING W. HALE
Chairman

HAROLD B. ALEXANDER
Secretary

SUNDAY, APRIL 28

2:00—Grove Lounge

2:00—**Clinical-Pathological Slide Conference**

The Presentation of Interesting and Instructive Eye Cases with Clinical and Pathological Correlation

2:00—Part I—Frederick R. Carriker, M.D., San Francisco.
Discussion.

2:45—Part II—A. Ray Irvine, Jr., M.D., Beverly Hills.
Discussion.

3:30—Recess.

3:40—Newer Approaches to Scleral Resection—Robert B. Leavelle, M.D., North Hollywood.
Discussion.

4:25—Business Meeting and Election of Officers.

4:40—Visit Technical and Scientific Exhibits.

REGISTRATION

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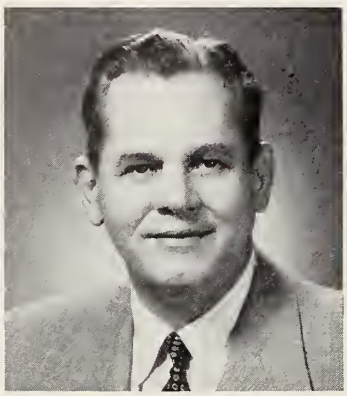
INDUSTRIAL MEDICINE AND SURGERY

Chairman.....Homer S. Elmquist, M.D., Los Angeles
Secretary.....Earle T. Dewey, M.D., San Francisco
Assistant Secretary.....Leonard J. Yamshon, M.D., Los Angeles



HOMER S. ELMQUIST
Chairman

EARLE T. DEWEY
Secretary

SUNDAY, APRIL 28

9:00—West Venetian Room

9:00—**The Management of Acute Traumatic Injuries of the Hand**—Edmond Dana Butler, M.D., San Francisco.

9:20—**Atrophy of Disuse as a Misleading Factor in the Diagnosis of Industrial Nerve Injuries—The Value of the Electromyogram in the Clarification of this Situation**—A. A. Marinacci, M.D., and Carl W. Rand, M.D., Los Angeles.

9:40—**Traumatic Abdominal Injuries**—A. E. Allegrini, M.D., Santa Cruz.

10:00—**Employment of Persons with Epilepsy and Heart Disease**—Lloyd Lorbeer, M.D., Burbank.

10:20—**Questions and Recess.**

10:40—**Psychiatry in Industrial Medicine**—W. Ray Poindexter, Jr., M.D., Oakland.

11:00—**California Industry and Hearing Conservation**—Aram Glorig, M.D., Los Angeles, by invitation.

11:20—**A New Method and Instrument for Rapidly Determining the Presence of a Possible Hearing Impairment**—Howard P. House, M.D., Los Angeles.

11:40—**Questions and Discussion.**

12:00—**Chairman's Address: The Diagnosis of Inguinal Hernia**—Homer S. Elmquist, M.D., Los Angeles.

MONDAY, APRIL 29

9:00—East Venetian Room

Joint Meeting with Section on General Practice

9:00—**Industrial Injuries in Migrant Farm Labor**—Donald P. La Tourette, M.D., Ceres.

9:20—**Facts and Fallacies in Industrial Poisoning**—Clinton H. Thienes, M.D., Pasadena.

9:40—**Evaluation of Genitourinary Symptoms in Industrial Medicine**—Jay J. Crane, M.D., Los Angeles.

10:00—**Subjective Complaints**—J. L. Barritt, M.D., San Francisco.

10:20—**Questions and Recess.**

10:40—**A Second Look at the Doctor's First Report of Work Injury**—Christopher Leggo, M.D., Palo Alto.

11:00—**Details of Industrial Accident Reports**—Paul Beddoe, M.D., Los Angeles.

11:20—**Permanent Disability Reports**—Packard Thurber, Jr., M.D., Los Angeles.

11:40—**Questions and Discussion.**

OBSTETRICS AND GYNECOLOGY

Chairman.....George E. Judd, M.D., Los Angeles
Secretary.....Keith P. Russell, M.D., Los Angeles
Assistant Secretary.....Donald R. Nelsan, M.D., San Francisca

GEORGE E. JUDD
Chairman

KEITH P. RUSSELL
Secretary

TUESDAY, APRIL 30

9:00—French Room

9:00— **Panel Discussion**

Bleeding in Late Pregnancy

Moderator: Edmund W. Overstreet, M.D., San Francisco

1. Problems of Diagnosis—E. E. Nichols, M.D., Pasadena.
2. Modern Treatment of Abruptio Placentae —James Merrill, M.D., San Francisco, by invitation.
3. Modern Treatment of Placenta Previa— William B. McGee, M.D., San Diego.

Roundtable Discussion by Members of the Panel.

Questions from the Floor.

10:15—The Relationship of the Microscopic Findings of the Endometrium to the Treatment in Uterine Bleeding—Richard L. Taw, M.D., Los Angeles.

Discussion by J. G. Moore, M.D., Los Angeles.

10:40—The Early Diagnosis and Conservative Treatment of Ectopic Pregnancy—Pendleton S. Tompkins, M.D., San Francisco.

Discussion by Leon Krohn, M.D., Los Angeles.

11:05—The Surgical Management of Varicose Veins in Pregnancy—Seymour M. Greenstone, M.D., E. Craig Herringman, M.D., and Theodore B. Massell, M.D., Los Angeles.

Discussion by A. M. McCausland, M.D., Los Angeles.

11:30—Chairman's Address—George E. Judd, M.D., Los Angeles.

11:50—Business Meeting and Election of Officers.

PRESIDENT'S DINNER DANCE

TUESDAY, APRIL 30

Cocoanut Grove, Ambassador Hotel, 8:00 p.m.

Formal dress optional

Tickets will be on sale in the Main Lobby

ORTHOPEDICS

Choirman.....John R. Block, M.D., Los Angeles
Secretary.....Roymond M. Wollerius, M.D., Sacramento
Assistont Secretary.....Floyd H. Jergesen, M.D., San Froncisca

JOHN R. BLACK
Chairman

RAYMOND M. WALLERIUS
Secretary

SUNDAY, APRIL 28

9:00—French Room

Joint Meeting with Sectian an Radialogy

For Program, see Section on Radiology

SUNDAY, APRIL 28

2:00—Regency Room

2:00—**The Care of High School Football Injuries: Twenty-five Years' Experience**—Rodney F. Atsatt, M.D., Santa Barbara.

2:20—**The Surgical Treatment of Acromioclavicular Separation in Athletes**—William R. Grannis, M.D., Palo Alto.

Discussion.

2:45—**Chairman's Address**—John R. Black, M.D., Los Angeles.

3:15—**Recess.**

3:30—**The Musculoskeletal Deformities Resulting from Hemophilia**—Ellis W. Jones, M.D., Los Angeles.

Discussion.

4:00—**Calcified Bursitis—A Misdiagnosis**—Donald Carpenter, M.D., Riverside.

Discussion.

4:30—**Business Meeting and Election of Officers.**

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PATHOLOGY AND BACTERIOLOGY

Chairman.....Justin R. Dorgelah, M.D., Oakland
Secretary.....Daminic A. DeSanto, M.D., San Diego
Assistant Secretary.....Leslie Grams, M.D., San Jase

JUSTIN R. DORGELOH
Chairman

DOMINIC A. DeSANTO
Secretary

SUNDAY, APRIL 28

9:00—East Venetian Room

9:00—**Introduction**—Justin R. Dorgeloh, M.D., Oakland.

9:10—**Giant Cell Tumor-like Lesions of the Bone—A Pathological Entity: A Preliminary Report**—Weldon K. Bullock, M.D., and J. Vernon Luck, M.D., Los Angeles.

9:30—**Evaluation of Laboratory Procedures Used in the Diagnosis of Hemorrhagic Disorders**—Lemuel W. Diggs, M.D., Memphis, Tennessee, by invitation.

10:20—**Discussion.**

10:30—**Intermission.**

10:40—**Pathology and Pathogenesis of Laryngeal Complications in Endotracheal Anesthesia**—Abraham T. Lu, M.D., Los Angeles, and Yasushi Tamura, M.D., Los Angeles, by invitation.

11:00—**Cardiac Pathology in Experimental Brucellosis**—Benjamin E. Konwaler, M.D., Long Beach, and Susumu Ohno, Ph.D., Los Angeles, both by invitation, and Charles M. Carpenter, M.D., Los Angeles.

11:20—**Nucleoproteins in Normal and Malignant Growth with Special Consideration for Fluorescent Microscopy**—Ludwig von Bertalanffy, Ph.D., Los Angeles, by invitation.

11:40—**Diagnostic Importance of Bone Marrow Aspiration in Metabolic Bone Diseases—Recovery of Osteoblasts and Osteoclasts**—Michael A. Rubinstein, M.D., Beverly Hills.

12:00—**Business Meeting and Election of Officers.**

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PEDIATRICS

Chairman.....Moses Grossman, M.D., San Francisco
Secretary.....Sidney Rosin, M.D., Los Angeles
Assistant Secretary.....Percy H. Jennings, Jr., M.D., Berkeley

MOSES GROSSMAN
Chairman

SIDNEY ROSIN
Secretary

SUNDAY, APRIL 28

9:00—Grove Lounge

9:00—**An Evaluation of the Flush Method for Determining Blood Pressures in Infants**—Arthur J. Moss, M.D., Wilbert Liebling, M.D., Los Angeles; and Wallace O. Austin, M.D., and Forrest H. Adams, M.D., Los Angeles, both by invitation.
Discussion.

9:30—**The Pediatrician and the Therapeutic Type of Nursery School**—Joseph D. Teicher, M.D., Los Angeles, by invitation.
Discussion.

10:00—**Management of Juvenile Rheumatoid Arthritis**—Gordon F. Williams, M.D., Menlo Park.
Discussion.

10:30—**Staphylococcal Infections in Children**—Richard Koch, M.D., Los Angeles.
Discussion.

11:00—**The Nervous Complications of Exanthem Subitum**—Phillip E. Rothman, M.D., and Morris J. Naiditch, M.D., Beverly Hills.
Discussion.

11:30—**Business Meeting and Election of Officers.**

SUNDAY, APRIL 28

2:00—French Room

Joint Meeting with Section on Allergy

For Program, see Section on Allergy

MONDAY, APRIL 29

9:00—French Room

9:00—**Unusual Spinal Cord Tumors in Childhood**—Robert W. Rand, M.D., and Carl W. Rand, M.D., Los Angeles.
Discussion.

9:30—**Congestive Failure in Infants and Children**—Saul J. Robinson, M.D., San Francisco.
Discussion.

10:00—**Chairman's Address: The Role of the Pediatrician in the General Hospital**—Moses Grossman, M.D., San Francisco.

10:30—**Positive Pressure Resuscitation in the Newborn Infant**—Miriam G. Wilson, M.D., Los Angeles.
Discussion.

11:00—**Recent Advances in the Treatment of Childhood Leukemia**—Carol Hyman, M.D., and Charles Brubaker, M.D., Los Angeles, both by invitation; and Phillip Sturgeon, M.D., Los Angeles.
Discussion.

VISIT THE TECHNICAL AND SCIENTIFIC EXHIBITS

PSYCHIATRY AND NEUROLOGY

Chairman.....Joachim A. Haenel, M.D., Las Angeles
Secretary.....Howard A. Black, M.D., Sacramenta
Assistant Secretary.....Elinor R. Ives, M.D., Los Angeles

JOACHIM A. HAENEL
Chairman

HOWARD A. BLACK
Secretary

TUESDAY, APRIL 30

9:00—Regency Room

Neurology

9:00—**Electromyography in Private Practice**—James G. Golseth, M.D., Pasadena.
Discussion.

9:30—**Experimental Observations on the Nature of the Epileptic Discharge**—John French, M.D., Long Beach.
Discussion.

10:00—**Certain Clinical and Electroencephalographic Aspects of Cerebral Vascular Disease**—Richard Walter, M.D., and Harry Fang, M.D., Los Angeles.
Discussion.

10:30—**Problems in the Diagnosis of Myasthenia Gravis**—Christian Herrmann, Jr., M.D., Los Angeles, by invitation.

11:00—**Business Meeting and Election of Officers.**

Psychiatry

11:10—**Pharmacology in Psychotherapy**—Theodore Rothman, M.D., Los Angeles.
Discussion.

11:40—**Chairman's Address: Psychiatry Today**—Joachim A. Haenel, M.D., Los Angeles.

WEDNESDAY, MAY 1

2:00—East Venetian Room

Joint Meeting with the Section on Public Health

2:00—**Suicide Problems in Medical Practice**—Seymour Pollack, M.D., Beverly Hills.

2:30—**The Problem of the Brain-Damaged Child in the Family Group**—Edmund F. Walker, M.D., Los Angeles.

3:30—**Public Health Activities in Mental Health in California**—Arnold D. Schwartz, M.D., Berkeley, by invitation.

4:00— **Panel Discussion**

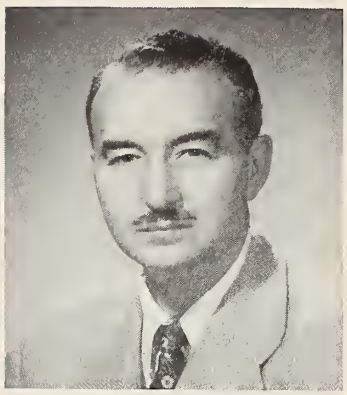
Prevention of Mental Illness

Members of the Panel: Edward Stainbrook, M.D., Los Angeles, by invitation; Frank F. Tallman, M.D., Los Angeles; Herbert Bauer, M.D., Woodland; and Arnold D. Schwartz, M.D., Berkeley, by invitation.

BRING PROPER IDENTIFICATION FOR REGISTRATION

PUBLIC HEALTH

Chairman.....Wilber J. Menke, Jr., M.D., Pasadena
Secretary.....James C. Malcolm, M.D., San Leandro
Assistant Secretary.....Gerald A. Heidbreder, M.D., Los Angeles



WILBER J. MENKE, JR.
Chairman

JAMES C. MALCOLM
Secretary

WEDNESDAY, MAY 1

9:00—Grove Lounge

9:00—**Severity of Poliomyelitis in Vaccinated and Nonvaccinated Persons**—Milford G. Wyman, M.D., Los Angeles, by invitation.

9:30—**Medical Evaluation of Disabled Persons Applying for Social Security Benefits**—Byron O. Mork, Jr., M.D., Los Angeles.

10:00—**A Study of Diseases of the Heart in a Working Population**—L. S. Goerke, M.D., and Edward Phillips, M.D., Los Angeles; and John M. Chapman, M.D., Wilfred Dixon, Ph.D., and Donald B. Loveland, M.S., Los Angeles, all by invitation.

10:30—**Prevention of Death and Disability from Cervical Cancer**—Robert Leeds, M.D., Castro Valley, by invitation; and James C. Malcolm, M.D., San Leandro.

11:00—**Medical Research Program of the U. S. Public Health Service**—Thomas D. Dublin, M.D., Bethesda, Maryland, by invitation.

11:30—Business Meeting.

WEDNESDAY, MAY 1

2:00—East Venetian Room

Joint Meeting with the Section on Psychiatry and Neurology

2:00—**Suicide Problems in Medical Practice**—Seymour Pollack, M.D., Beverly Hills.

2:30—**The Problem of the Brain-Damaged Child in the Family Group**—Edmund F. Walker, M.D., Los Angeles.

3:00—**Public Health Activities in Mental Health in California**—Arnold D. Schwartz, M.D., Berkeley, by invitation.

3:30— **Panel Discussion**

Prevention of Mental Illness

Members of the Panel: Edward Stainbrook, M.D., Los Angeles, by invitation; Frank F. Tallman, M.D., Los Angeles; Herbert Bauer, M.D., Woodland; and Arnold D. Schwartz, M.D., Berkeley, by invitation.

VISIT THE TECHNICAL AND SCIENTIFIC EXHIBITS

RADIOLOGY

Choirmon .....Austin R. Wilsan, M.D., Glendole
Secretory.....Stonfard B. Rossiter, M.D., Menlo Park
Assistant Secretary.....Nathan M. Spishakaff, M.D., Beverly Hills

AUSTIN R. WILSON
Chairman

STANFORD B. ROSSITER
Secretary

SUNDAY, APRIL 28

9:00—French Room

Joint Meeting with Sectian an Orthopedics

9:00—**Orthopedic-Radiologic Seminar**
Orthopedist: John J. Niebauer, M.D., San Francisco.
Radiologist: Henry Jones, M.D., San Francisco.
Pathologist: David Linder, M.D., San Francisco.
Discussion by Paul E. McMaster, M.D., Beverly Hills.

10:00—**The Use of Magnified X-rays in Orthopedic Surgery**—Harold Swerdloff, M.D., Los Angeles.
Discussion.

10:30—**Recess.**

10:45—**Fractures of the Lower Extremity: An Orthopedist's Viewpoint**—Ben Colloff, M.D., San Francisco.
Discussion.

11:10—**Forensic Skiagraphy and Expert Radiologic Testimony**—L. Henry Garland, M.D., San Francisco.
Discussion.

SUNDAY, APRIL 28

2:00—East Venetion Room

Diagnostic Radiology

2:00—**The Place of Sialangiography in Parotid Lesions — Surgical Correlation of Radiologic Findings in Seventy Cases**—Robert J. Einstein, M.D., and Samuel L. Perzik, M.D., Beverly Hills.
Discussion.

2:20—**Use of Pneumoperitoneum for Traumatic Rupture of the Spleen and Liver**—J. W. Birsner, M.D., Marion C. Barnard, M.D., and John W. Kizziar, M.D., Bakersfield.
Discussion.

2:40—**Operative Cholangiography**—Charles C. Smith, M.D., and George A. Faris, Jr., M.D., San Jose.

3:00—**Enlargement of the Placenta as Demonstrated by Soft Tissue Placentography**—James W. Ryel, M.D., and George Jacobson, M.D., Los Angeles.
Discussion.

3:30—**Recess—Annual Meeting of the Pacific Roentgen Society.**

MONDAY, APRIL 29

9:00—Grove Lounge

Therapeutic Radiology

9:00—**Metabolic Impact of Radiation** — Malcolm Jones, M.D., San Francisco.
Discussion.

9:30—**Observations and Results with Linear Accelerator**—Henry Kaplan, M.D., San Francisco.
Discussion.

10:00—**Radiation Therapy of Intrathoracic Neoplasms**—Franz Buschke, M.D., San Francisco, by invitation.
Discussion.

10:30—**Recess.**

(Continued on next page)

10:45—**The Management of Breast Cancer**—Justin J. Stein, M.D., Los Angeles.
Discussion.

11:15—**Body Section Planigraphy**—Richard A. Ottoman, M.D., and Stefan Wilk, M.D., Los Angeles; and William Hanafee, M.D., Los Angeles, by invitation.
Discussion.

11:40—**Treatment of Carcinoma of the Bladder with Cobalt^{60}**—Henry L. Jaffe, M.D., Los Angeles.
Discussion.

12:00—**Business Meeting and Election of Officers.**

PRE-CONVENTION CANCER CONFERENCES

Saturday, April 27—9:15 a.m. to 4:30 p.m.

AMBASSADOR HOTEL, LOS ANGELES

Radiology . . . . . Colonial Room
Morning Session—Diagnosis
Afternoon Session—Therapy

Pathology . . . . . East Venetian Room
Microscopic Pathology of Skin Cancer

Arranged and Sponsored by the Cancer Commission of the California Medical Association

EMERGENCY CALLS AND MESSAGES

Each physician should notify his own secretary regarding the *exact* section he plans to attend and the time of his attendance. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 5-1581.

UROLOGY

Chairmon.....Wilson Stegemon, M.D., Sonto Roso
Secretory.....Edmund Crowley, M.D., Los Angeles
Assistont Secretory.....Roy C. Atkinson, M.D., Ooklond

WILSON STEGEMAN
Choirmon

EDMUND CROWLEY
Secretary

WEDNESDAY, MAY 1

9:00—West Venetion Room

9:00—**The Role of the Urologist in Medicine**—Donald A. Charnock, M.D.
Discussion.

9:30—**A More Physiologic Method of Performing Cystometry: Excretory Cystometry**—A. Estin Comarr, M.D., Long Beach.
Discussion.

10:00—**A Modern Concept of Infections of the Prostate**—Franklin Farman, M.D., Whittier.
Discussion.

10:30—**Chromosomal Sex Determination of Prostate**—Harold G. Kudish, M.D., Beverly Hills.
Discussion.

11:00—**Ureteral Injuries**—Robert M. Boughton, M.D., La Jolla.

WEDNESDAY, MAY 1

2:00—West Venetion Room

2:00—**Comments on the Treatment of Urinary Tract Calculi**—Wyland F. Leadbetter, M.D., Boston, Massachusetts, by invitation.
Discussion.

2:40—**Serum Mucoproteins in Prostatic Carcinoma**—John A. Arcadi, M.D., Whittier.
Discussion.

3:10—**Chairman's Address: The Role of Curiosity in the Medical Armamentarium** — Wilson Stegeman, M.D., Santa Rosa.
Discussion.

3:40—**Urosepsis: Product of Anomalies in High School and College Students**—Samuel Peck, M.D., San Diego.

4:10—**Donor Insemination: A Report of the Results in 380 Cases**—John O. Haman, M.D., San Francisco.
Discussion.

4:40—**Business Meeting and Election of Officers.**

BRING PROPER IDENTIFICATION FOR REGISTRATION

Scientific Exhibits

Experimental Methods for Producing a Collateral Circulation to the Heart Directly from the Left Ventricle—Alfred Goldman, M.D., Duarte.—A self-illuminated exhibit depicting implantation of free arterial grafts into the left ventricle, and methods and data evaluating the results of this surgical procedure for augmenting the coronary circulation in dogs.

Regional Anesthesia in Stereoscopic Presentation—William H. L. Dornette, M.D., Los Angeles, and James W. Moreland, M.D., Los Angeles, by invitation.—The physician studying regional anesthesia can gain a more accurate concept of needle placement through the use of three-dimensional rather than conventional two-dimensional visual aids. This exhibit depicts 22 nerve blocks, showing in stereo the description, surface anatomy, skeletal mockup and radiograph.

Improved Method in Quantitative Dietetics—Harold C. Sox, M.D., Palo Alto.—A simplified method for quantitative diets is presented. It includes the use of controlled packaged foods and demonstrates its effective use in the treatment of diabetes and obesity.

Operative Cholangiograms—C. C. Smith, M.D., San Jose, and George A. Faris, Jr., M.D., San Jose, by invitation.—Roentgenograms of surgically made operative cholangiograms will be shown on viewing boxes. X-ray films will be accompanied by sketches and short clinical histories.

Congenital Anomalies of the Gastrointestinal Tract: A Clinicopathological Correlation—Robert J. Harvey, M.D., Bert Halter, M.D., San Francisco; and G. Hal DeMoy, M.D., Richmond.—Color ground glass slides of anomalies, photographs of x-rays of anomalies, drawings and charts pertaining to etiology, pathogenesis, diagnoses and therapy.

Chemotherapy of Neoplastic Diseases—Forrest M. Willett, M.D., Byron E. Hall, M.D., Thomas V. Feichtmeier, M.D., and Donald R. Hales, M.D., San Francisco.—Appropriately lighted, colored cutouts in light boxes, and appropriately lettered schema of treatment, using chemotherapeutic agents.

Malrotation of the Intestinal Tract, Embryology, Pathology, and Surgery—Joseph Gaster, M.D., Los Angeles.—The embryology of the normal development, rotation and attachments of the midgut are demonstrated by models and drawings. This development may be arrested or abnormal at any stage, thus producing a variety of anomalies. The embryology and anatomy of the anomalies is shown, as well as the surgical correction.

Diagnosis of Cancer with Fluoroscence Microscopy—Leo Kaplan, M.D., Francis Masin, M.D., Marianna Masin, M.D., and Ludwig von Bertalanffy, Ph.D., Los Angeles, all by invitation.—This exhibit will show the application of a fluorescence technique, contrasting normal with malignant cells, to emphasize the diagnostic value of this procedure.

Diagnostic Importance of Bone Marrow Aspiration in Metabolic Bone Disease: Recovery of Osteoblasts and Osteoclasts—Michael A. Rubinstein, M.D., Beverly Hills.—This exhibit will show the diagnostic importance of bone marrow aspiration by microphotographs and illustrative case histories.

Infertility—Edward T. Tyler, M.D., and Henry J. Olson, M.D., Los Angeles.—A summary of current diagnostic criteria and the use of various therapeutic approaches in male and female infertility using charts, posters and photomicrographs.

Plastic and Reconstructive Surgery—Edward S. Lamont, M.D., Los Angeles.—Original cast models, drawings and photographs depicting plastic surgical procedures in congenital deformity—cleft lip, cleft palate, syndactylism, nasal deformities, ptosis, etc.; injury—skin grafting of burns, hands, flaps over bone, etc.; and disease—reconstruction of defects following resection of carcinoma about the face, etc.

Organizational Exhibits

Postgraduate Medical Education—C.M.A. Committee on Postgraduate Activities

California State Tumor Registry—California State Department of Public Health

Historical Landmarks in Medicine and Surgery—Los Angeles County Medical Association Library

Careers in Nursing—California League for Nursing

California Physicians' Service—Blue Shield

C.M.A. Public Relations Department

California Blood Bank System

Federal Food and Drug Administration and the Physician

Los Angeles Physicians' Aid Association

Motion Picture Program

Arthur E. Smith, M.D., D.D.S., Los Angeles, Chairman

COLONIAL ROOM

A carefully selected program of approximately 100 medical motion pictures will be shown Sunday afternoon and evening, Monday morning and evening; Tuesday morning and evening; and Wednesday morning.

A full schedule showing the times and titles of each film will appear in the program distributed at the annual session at the time of registration.

The preliminary schedule is as follows:

SUNDAY AFTERNOON, APRIL 28

2:00 to 6:00 p.m. . . . . Pathology and General Surgery

SUNDAY EVENING, APRIL 28

7:00 to 11:00 p.m. . . . . Eye and Internal Medicine

MONDAY MORNING, APRIL 29

9:00 to 1:30 p.m. . . . . Dermatology, Neurology and Psychiatry

MONDAY EVENING, APRIL 29

7:00 to 11:00 p.m. . . . . Industrial Medicine and Surgery and Orthopedics

TUESDAY MORNING, APRIL 30

9:00 to 1:30 p.m. . . . . Radiology and Urology

TUESDAY EVENING, APRIL 30

7:00 to 11:00 p.m. . . . . Obstetrics and Gynecology and General Surgery

WEDNESDAY MORNING, MAY 1

9:00 to 1:30 p.m. . . Allergy, Anesthesiology, General Practice, Ear, Nose and Throat, and Pediatrics

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ROOM DIRECTORY

C.M.A. Office . . . . . Rooms 125-126

REFERENCE COMMITTEE ROOMS

Reference Committee No. 1—Reports of Officers, Council Commissions, Standing and Special Committees:

Monday . . . . . Lido Room Tuesday . . . . . Variety Club

Reference Committee No. 2—Finance—Reports of Secretary-Treasurer, Executive Secretary and Budget:

Monday and Tuesday . . . . . Room 127

Reference Committee No. 3—Resolutions, New and Miscellaneous Business:

Monday Morning . . . . Dolphin Court Monday Afternoon . East Venetian Room
Tuesday Morning . . . . Dolphin Court Tuesday Afternoon . East Venetian Room

Reference Committee No. 4—Amendments to the Constitution and By-Laws:

Monday . . . . . Garden Room Tuesday . . . . . Room 132

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WOMAN'S AUXILIARY *to the* CALIFORNIA MEDICAL ASSOCIATION

Twenty-Seventh Annual Convention, April 28 to 30, 1957

Headquarters: Ambassador Hotel, Los Angeles

MRS. PAUL BLAISDELL, President

MRS. LEONARD D. OFFIELD, President-elect

Convention Chairman: MRS. HENRY M. CUNEO

REGISTRATION

Main Lobby

Sunday, April 28—9:00 a.m. to 4:00 p.m.
Monday, April 29—9:00 a.m. to 4:00 p.m.
Tuesday, April 30—8:30 a.m. to 10:30 a.m.

SUNDAY, APRIL 28

8:00 a.m.—Executive Committee Breakfast Meeting, Garden Room.

9:30 a.m.—Annual Report of the Woman's Auxiliary by the President, Mrs. Paul Blaisdell, to the California Medical Association, House of Delegates, Embassy Room. Auxiliary members and doctors' wives are invited to attend.

10:30 a.m.—Pre-Convention Board Meeting, Lido Room.

6:00 to 8:00 p.m.—Reception honoring Mrs. Donald A. Charnock, wife of the President of the California Medical Association, East and West Venetian rooms. All doctors and their wives are cordially invited.

MONDAY, APRIL 29

9:00 a.m.—Orientation Meeting, Palm Court.

10:00 a.m.—First Business Session of the 27th Annual Meeting, West Venetian Room. Mrs. Paul Blaisdell, presiding.

1:00 p.m.—Luncheon, Past State Presidents, Regency Room.

2:15 p.m.—Second Business Session, West Venetian Room.

TUESDAY, APRIL 30

9:00 a.m.—Third Business Session, West Venetian Room. Mrs. Paul Blaisdell, presiding.

12:30 p.m.—Luncheon in honor of Mrs. Paul Blaisdell and Mrs. Leonard D. Offield; Members of the State Advisory Board; and Past State Presidents, Cocoanut Grove.

3:00 p.m.—Post-Convention Board Meeting, Regency Room. Mrs. Leonard D. Offield, presiding.

8:00 p.m.—Dinner and ball honoring the C.M.A. President, Dr. Donald A. Charnock, Cocoanut Grove. Formal dress optional.

Technical Exhibits

The C.M.A. is again fortunate in having available the beautiful and spacious Ballroom, Sunset Room and Boulevard Room for technical exhibits. These areas proved eminently satisfactory for all in 1956 and the same floor plan is being used for the 1957 meeting.

Here, gathered in one place, is a large array of the latest and newest developments in drugs, therapeutic aids, books, business equipment and other items used by physicians. Accompanying the products and services are the well-informed and courteous representatives of the many exhibitors, each there to serve the doctors attending the session and each ready to provide full information on his goods or services.

Physicians have often likened the Technical Exhibit to a concentrated postgraduate program, offering the most up-to-date materials available. The 1957 exhibit certainly lives up to this description. Members will find their time with the exhibits extremely well spent and rewarding. Your attendance is cordially urged. Exhibits will be open from 9 a.m. to 5 p.m.

ABBOTT LABORATORIES — Boulevard Room
North Chicago, Illinois — Booths 98 and 99

The new sedative, tranquilizer and antihypertensive, NEMBU-SERPIN Filmtabs (Nembutal and Reserpine, Abbott) will be among the new products exhibited by Abbott Laboratories. Also shown will be the new nonbarbiturate hypnotic, PLACIDYL (Ethchlorvynol, Abbott); and DESBUTAL, the new mood-improvement drug. Abbott will also exhibit ERYTHROCIN Filmtabs, the antibiotic providing specific action against coccic infection and minimal risk of side effects; IBEROL Filmtabs containing intrinsic factor concentrate, B_{12}, iron and other vitamins; OPTILETS Filmtabs, high-potency therapeutic multivitamins; VI-DAYLIN, the homogenized mixture of seven vitamins; SELSUN for control of seborrheic dermatitis; PENTOTHAL SODIUM, and Abbott's complete line of intravenous solutions and equipment.

A. S. ALOE COMPANY — Boulevard Room
Los Angeles — Booth 79

AMERICAN STERILIZER CO. — Boulevard Room
Erie, Pennsylvonio — Booth 105

AUTOCLAVES—Square Autoclaves designed for increased loading capacity.

1. Model—6614—size 6 x 6 x 14 Hi-Speed.
2. Model 8816—size 8 x 8 x 16 with preheat operation and other improvements in basic design and performance.
3. Model 1022—size 10 x 10 x 22—The unit for clinics or centralized sterilization. This announcement represents the first public display of the Autoclave. It has a built-in recording thermometer similar to that furnished with our standard hospital installations. This is one of many other interesting features which provide the latest in sterilization technique.

STERILIZERS—Four sizes—8, 14, 16 and 17 inches.

CABINETS—Single and double door with recessed sterilizers.

AMES COMPANY, INC. — Sunset Room
Elkhort, Indiono — Booth 24

The Ames exhibit will introduce a new and unique concept in sedation—a new calmative drug—NOSTYN. NOSTYN is chemically and physiologically unrelated to any available compound. NOSTYN allays anxiety and tension with the power of gentleness; possessing a wide margin of safety, NOSTYN avoids depression or drowsiness.

AUDIO-DIGEST FOUNDATION — Ballroom
Glendole — Booth 62

Audio-Digest Foundation—a subsidiary of the California Medical Association—gives the busy physician an effortless tour through the best of current medical literature each week. This medical tape-recorded "newscast"—compiled and reviewed by a professional Board of Editors—may be heard in the physician's automobile, home or office. The Foundation also offers medical lectures by nationally recognized authorities.

AYERST LABORATORIES — Sunset Room
New York, New York — Booth 31

All physicians attending the annual session of the California Medical Association are cordially invited to visit the Ayerst booth where such specialties as Premarin I.V. for spontaneous hemorrhage; Mysoline, recent advance in anticonvulsive drug, and other special products of our manufacture will be available.

BABY DEVELOPMENT CLINIC — Sunset Room
Chicogo, Illinois — Booth 25

Baby Development Clinic, Booth 25, invites you to see and hear the story of TMTD (new germicide developed by Lever Brothers); to send sample NEW LIFEBUOY with TMTD; learn why EVENFLO NIPPLES with PATENTED TWIN AIR VALVES enable babies to nurse in comfort as at the breast. See other new Evenflo products. Become acquainted with the BOOK HOUSE FOR CHILDREN, the reading plan for parents and children graded from infancy to high school. For maternity patients, the new and professionally designed supports, garter belts; prenatal and nursing brassieres produced by MATERNALINE Inc.

BANNER CROSS — Ballroom Foyer
Belmont — Booth 5

Superior and unique medical specialties for treatment of disease of the peripheral vascular system; varicose problems; leg ulcers, phlebitis, thrombophlebitis, etc. Special products for convenient office practice; eczema, dermatitis, traumatic injury, fractures, burns, postoperative treatment of veins and wounds.

Inviting all physicians and distributors to see and receive instructions in New Miracle "STRETCHON" moldable, stretchable prefabricated casting material; STRETCHON covers more—more easily.

BARNES-HIND LABORATORIES, INC. — Sunset Room
Sunnyvole — Booth 21

Barnes-Hind Laboratories will exhibit:

TRANQUINAL, the first true "tranquilizer" made available to the Profession. Since 1952 TRANQUINAL has experienced five years of practical experience by physicians in their practice. The lack of side and after effects and freedom from "hangover" and sleepiness makes TRANQUINAL the drug of choice where *true tranquility* is desired.

LEMRON TABLETS and SYRUP recently released provide the Lemon Bioflavonoids, the most complete Bioflavonoid Complex, with Ascorbic Acid. LEMRON SYRUP is very pleasant to the taste and demonstrates excellent patient acceptance.

PIPERONE TABLETS and SYRUP provide piperazine hexahydrate in two exceptionally easy to take dosage forms for the treatment of roundworm and pinworm infestations.

DON BAXTER, INC. — Boulevard Room
Glendole — Booth 96

M. J. BENJAMIN — Bollroom Foyer
Los Angeles — Booth 11

M. J. Benjamin will display popular and new orthopedic appliances. The accent this year will be on functional bracing.

BOYLE & COMPANY — Boulevord Room
Bell Gordens — Booth 89

Boyle & Company will show GLYTINIC, a new glycine liquid Hematinic; OPIDICE, an adjunct in the management of Obesity; TRIVA, the twelve day treatment for vaginitis; the Citra family CITRA FORTE for coughs, Citra Capsules and Citra Syrup for colds, hayfever and allergies.

BURROUGHS WELLCOME & CO. INC. — Sunset Room
Tuckohoe, New York — Booth 34

NEW PRODUCTS:

The extensive research facilities of "B. W. & Co.," both here and in other countries, are directed to the development of improved therapeutic agents and techniques. Also much basic theoretical work in our laboratories and in cooperation with internationally known institutions is contributing to the reservoir of fundamental medical knowledge.

Through such research "B. W. & Co." has made notable advances related to leukemia, malaria, diabetes, and diseases of the autonomic nervous system; and to antibiotic, muscle-relaxant, antihistaminic, and antinauseant drugs.

An informed staff at our booth will welcome the opportunity to discuss our products and latest developments with you.

CAMEL CIGARETTES — Boulevard Room
Winston-Solem, North Corolino — Booth 84

See write-up under R. J. Reynolds Tobacco Co.

CANRIGHT COMPANY — Sunset Room
Glendole — Booth 35

ELDONAL is now available in four dosage forms.

ELDONAL TABLETS containing a well-balanced amount of each of the three belladonna derivatives plus ¼ gr. pentobarbital.

ELDONAL ELIXIR—each teaspoonful is equivalent to one of the above ELDONAL tablets.

And now the new dosage forms:

ELDONAL-S—each tablet contains the same amount of belladonna derivatives as Eldonal, *but* twice as much pentobarbital—½ gr.

ELDONAL-S therefore delivers the usual amount of antispasmodic therapy, plus *twice* as much sedation.

ELDONAL-Tardas is the original Eldonal formula tripled in a time-disintegrating tablet to allow constant antispasmodic and mild sedation action for a twelve-hour period. The dosage is one tablet night and morning for continual around the clock therapy.

CHICAGO PHARMACAL CO. — Sunset Room
Chicogo, Illinois — Booth 51

Chicago Pharmacal features the following Chimedic products: URISED, nationally-known and clinically proved tablet which provides both a thorough antisepsis and comfortable sedation in cystitis and various genitourinary infections; RESYDESS, the first antiobesity tablet which frees the patient from anxiety and stress as well as reduces weight safely; CITRISAN, a valuable antiarthritic tablet containing salicylamide, vitamin C, and the lemon bioflavonoid complex; BEXIBEE, the natural combination injectable containing 1000 mcg. Vitamin B_{12} plus 100 mg. Vitamin B_1; together with a complete line of tablets, parenterals, liquids, and ointments awaiting your inspection.

CIBA PHARMACEUTICALS PRODUCTS INC. — Ballroom
Summit, New Jersey — Booths 58 and 59

CIBA is featuring two prescription specialties—RITALIN, a new mild stimulant-antidepressant, and DORIDEN, a nonbarbiturate hypnotic-sedative. RITALIN raises depressed patients to normal levels of psychomotor activity without amphetamine-like overstimulation or depressive rebound. Nonhabit-forming DORIDEN is already being widely used as a safe, barbiturate replacement. Representatives will be present to answer queries on these effective agents.

THE COCA-COLA COMPANY — Sunset Room
Atlanta, Georgio — Booth 44

Ice-cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Los Angeles and The Coca-Cola Company.

CUTTER LABORATORIES — Sunset Room
Berkeley — Booth 19

CUTTER LABORATORIES, pioneer in the field of electrolyte solutions, will feature their new product Polysal Elixir—an oral balanced electrolyte preparation. In biologicals we are featuring a new product—Adult Dip-Tet—for the immunization of adults and children over 8 years against diphtheria and tetanus. Also on display will be pediatric immunizing agents containing "Alhydrox" (aluminum hydroxide adsorbed) in providing our low dosage form. Human blood fractions—Hypertussis, Poliomyelitis Immune Globulin, Albumin and Parenogen — will also be on display.

In addition to our intravenous solutions line, we will show plastic blood bags and intravenous sets.

DARWIN LABORATORIES — Sunset Room
Los Angeles — Booth 52

The following three items will be displayed:

LIPO-HEPIN 200, sodium heparin U.S.P., in form allowing only one injection per day for 24-hour anticoagulant effect

regardless of patient weight. Ready to use, no prewarming, convenient, economical and effective.

TRYPTO-PLEX and DAR-ZYME, purified trypsin concentrate, in solution and ointment form for topical proteolytic digestion of necrotic tissue. Ready to use, no mixing, economical, convenient and effective.

ADRENALEX, Adrenal Cortex Extract U.S.P., in both aqueous and oil injectable solution.

F. A. DAVIS COMPANY
Philadelphia, Pennsylvania

Boulevard Room
Booth 101

Falk *Urological Injuries*, Decker & Decker *Practical Office Gynecology*, Kampmeier *Physical Examination In Health & Disease*, Lederer & Hollender *Basic Otolaryngology*, Marr *Pioneer Surgeons At Woman's Hospital*, Merewether *Industrial Medicine & Hygiene*—3 Volumes, Nesbitt *Perinatal Loss in Modern Obstetrics*, Rob & Smith *Operative Surgery*—8 Volumes & Index, Simon *Principles of Chest X-ray Diagnosis*, Stroud & Stroud *Cardiovascular Disease*—2 Volumes—Boxed.

DESITIN CHEMICAL COMPANY
Providence, Rhode Island

Sunset Room
Booth 23

DESITIN OINTMENT: the pioneer in external cod liver oil therapy. Indications: diaper rash, slow healing wounds, burns of all degrees, lacerations, hemorrhoids and fissures.

DESITIN POWDER: a unique, dainty medicinal powder saturated with cod liver oil.

DESITIN HEMORRHOIDAL SUPPOSITORIES with COD LIVER OIL: coats anorectal area with soothing, lubricating cod liver oil, gives prompt relief of pain, allays itching.

DESITIN LOTION: the original cod liver oil lotion, soothing, protective, mildly astringent and healing, in nonspecific dermatitis, pruritus; poison ivy, etc.

RECTAL DESITIN OINTMENT: A unique formula, providing rapid and effective relief in simple hemorrhoids, pruritus ani, fissures, etc. Does not contain narcotics, local anesthetics, styptics to mask any serious symptoms.

DEVEREUX SCHOOLS
Santa Barbara

Sunset Room
Booth 14

Our exhibit includes large color photos of the school campus with a display of "Arts and Crafts" items made by the students at the California Schools. The Devereux Foundation offers a year-round program of education and treatment for children presenting academic and emotional difficulties. There are sixteen Devereux Schools in Pennsylvania, as well as the two divisions in the California unit. Each unit offers a controlled environment with modern training designed for the specific needs of each child. Resident psychiatric, medical, and psychological personnel provide facilities for student evaluations, integrated programs, and, where indicated, individual and group psychotherapy. Full cooperation with the referring physician in his plans for the child's training and care, is given.

THE DIETENE COMPANY
Minneapolis, Minnesota

Boulevard Room
Booth 78

Have YOU tasted MERITENE . . . the whole protein supplement that DOES taste good? Visit our booth, enjoy a MERITENE Milk Shake with its multiple nutritive values.

While you're there, review the Dietene Diet based on DIETENE Reducing Supplement. It provides the rare combination of low calories (1000) with high intake of protein and all essential vitamins and minerals in an interesting, effective, SAFE weight reducing diet.

DOHO CHEMICAL CORPORATION
New York, New York

Sunset Room
Booth 18

DOHO Chemical Corporation is pleased to exhibit: AURALGAN, ear medication in Otitis Media and removal of Cerumen; OTOSMOSAN, effective, nontoxic Fungicidal and Bactericidal (gram negative-gram positive) in the suppurative and aural dermatomycotic ears; RHINALGAN, nasal decongestant free from systemic or circulatory effect and equally safe to use on infants as well as the aged; NEW LARYLGAN, soothing throat spray and gargle for infectious and noninfectious sore throat involvements.

Mallon Chemical Corporation, Subsidiary of the Doho Chemical Corporation, is also featuring: RECTALGAN, liquid topical anesthesia, for relief of pain and discomfiture in hemorrhoids, pruritus and perineal suturing, and DERMOPLAST, aerosol freon propellent spray for fast relief of surface pain, itching, burns and abrasion. Also Obs. & Gyn. use.

DOME CHEMICALS INC.
New York, New York

Sunset Room
Booth 42

Dome Chemicals Inc., Booth 42, presents the most complete line of antipruritic and antiinflammatory dermatologicals: DOMEBRO WET DRESSINGS (the MODERNIZED Burow's Solution); ACID MANTLE CREME (pH 4.2) and LOTION (pH 4.5) (Specific for Alkali and Soap Eczemas); CORT-DOME CREME (pH 4.6) and LOTION (pH 4.6) (in ½%, 1% and 2% strength) of Micronized Hydrocortisone Alcohol in the EXCLUSIVE SOLUTION for Acne; VI-DOM-A BUCCAL TABS (75,000 and 150,000 I.U. of synthetic vitamin A), VI-DOM-A-C ORAL-TABS (buccal tablets containing 50,000 U.S.P. units of synthetic vitamin A and 50 mg. of vitamin C) and VI-DOM-C ORAL-TABS (containing 1335 mg. of vitamin C) for high vitamin blood levels through buccal absorption.

EATON LABORATORIES
Norwich, New York

Ballroom
Booth 68

Published reports show that Furadantin is one of the most effective and rapidly acting agents available at this time for the treatment of prostatitis and acute and chronic urinary tract infections.

Furadantin has specific affinity for the urinary tract, producing antibacterial concentration in 30 minutes. Time-consuming trial and error with less effective agents is eliminated.

It has been reported in the literature that Tricofuron Vaginal Suppositories and Powder are highly effective in the treatment of trichomonal vaginitis and the accompanying secondary bacterial infections.

Tricofuron affords relief of symptoms within a few days, and cures the majority of cases within one menstrual cycle.

For painless therapy of urethritis, Furacin Urethral Suppositories are indicated. They relieve pain and burning rapidly, eradicate most bacteria common to urethral infections, cling to urethra for prolonged antibacterial effect, are easy for patient to insert at home, safe and nonirritating.

ENCYCLOPAEDIA BRITANNICA, INC.
Los Angeles

Sunset Room
Booth 45

Encyclopaedia Britannica, Inc.—EB's Biggest Revision in a quarter of a Century! The 1957 Edition of Encyclopaedia Britannica is a new milestone in Britannica's 189 year history, representing, as it does, the biggest revision—in a quarter of a century—of what has long been acknowledged as the world's most authoritative reference work. Approximately 3½ million word changes are involved in revisions affecting over 4,000 articles.

CHARLES O. FINLEY & CO. — Sunset Room
Chicago, Illinois — Booth 56

Representatives of Charles O. Finley & Co., administrators of the California Medical Association group disability insurance program, will be on hand to describe the program to eligible members and to answer your questions. You are invited to come in, sit down and relax.

C. B. FLEET COMPANY, INC. — Boulevard Room
Lynchburg, Virginia — Booth 95

During the past fifty years PHOSPHO-SODA (FLEET) has been a symbol of elegance in sodium phosphate medication. FLEET ENEMA DISPOSABLE UNIT—an enema solution of Phospho-Soda (Fleet)—is a worthy companion product. The single-use unit simplifies and assures satisfying preparation for proctoscopy and as a routine enema it is a boon to the hospitalized patient.

FOREMOST DAIRIES — Sunset Room
San Francisco — Booth 20

E. FOUGERA & COMPANY, INC. — Ballroom
New York, New York — Booth 67

E. Fougera & Company, Inc. and Division, Varick Pharmacal Company, Inc., cordially invites physicians to discuss with Professional Service Representatives new preparations of importance to their everyday practice. Descriptive literature and samples of all products will be made available.

GEIGY CHEMICAL CORP. — Ballroom
Yonkers, New York — Booth 72

The Geigy exhibit will feature PRELUDIN—the new chemically different appetite suppressant noted for its absence of side actions. Also on display will be BUTAZOLIDIN—potent nonhormonal antiarthritic; new STEROSAN Hydrocortisone Ointment — antiinflammatory, bacteriostat and fungistat, and other well known Geigy products.

GENERAL ELECTRIC COMPANY — Sunset Room
Milwaukee, Wisconsin — Booth 32

GERBER PRODUCTS COMPANY — Sunset Room
Fremont, Michigan — Booth 30

WHEN MILK IS CONTRAINDICATED as the basic food for infants, Gerber "Meat Base Formula" can provide a nutritionally adequate replacement. It is well accepted and tolerated by infants of all ages. Your Gerber detailman invites you to evaluate "Meat Base Formula" and the complete line of supplementary baby foods.

You are also invited to review new editions of Gerber's baby care booklets. Each is designed especially for distribution by physicians. Each provides noncontroversial information in simple, easy-to-understand language. The service is complimentary.

GRAY PHARMACEUTICAL COMPANY, INC. — Ballroom
Newton, Massachusetts — Booth 70

The Gray Pharmaceutical Company, Inc. exhibit features:

DIOVAC CAPSULES, DIOVAC SYRUP, DIOVAC PEDIATRIC SYRUP. DIOVAC, by reducing the surface tension of water, enables moisture to permeate hard, dry fecal material, softens stools, and permits normal evacuation. DIOVAC is indicated for all degrees of constipation.

LYSIDOX is a protein anabolic for geriatric, convalescent and surgical patients. LYSIDOX increases the biologic value of dietary proteins and improves total protein metabolism.

L-GLUTAVITE is a palatable mixture of therapeutic dosages of monosodium L-GLUTAMATE and niacin with specific vitamins and minerals. It is indicated for elderly patients who suffer from cerebral symptomatology.

DEXAZYME is a somatic stimulant and psychic antidepressant. In depressed patients, DEXAZYME raises mood levels, improves mental clarity, and supports metabolism.

GREAT BOOKS OF THE WESTERN WORLD — Sunset Room
Los Angeles — Booth 27

We will exhibit the complete 54 volume set of "Great Books of the Western World," published by Britannica and University of Chicago. Set includes 443 complete works; 74 authors; spans 30 centuries of Western civilization. Two volumes comprise the revolutionary SYNTOPICON, and "Index of Ideas" requiring 9 years of work by 100 scholars, and completed at a cost of $2,000,000. The SYNTOPICON enables the reader to read IN the Great Books, as well as THROUGH them, reading topically at the point of his own maximum interest.

H. J. HEINZ CO. — Sunset Room
Pittsburgh, Pennsylvania — Booth 38

Heinz Baby Foods provide babies with the necessary nutrients for steady growth and sound bodies. These foods also make appetizing meals for older patients and convalescents.

Here are the newest Baby Foods. They are Heinz originals. Strained Vegetables, Egg Noodles and Chicken; Strained Chicken Noodle Dinner; Strained Potatoes (white); Junior Vegetables, Egg Noodles and Chicken; Junior Chicken; Junior Breakfast—Cereal, Eggs and Bacon; Junior Spaghetti, Tomato Sauce and Meat; High Protein Cereal. The Nutritional Data Book for physicians and literature for mother's use are available.

HOFFMANN-LA ROCHE INC. — Ballroom
Nutley, New Jersey — Booth 60

GANTRIMYCIN combines 333 mg. Gantrisin and 75 mg. oleandomycin for use in a wide variety of bacterial infections. Oleandomycin is a new antibiotic principally active against gram-positive microorganisms. It does not display cross resistance with most other antibiotics. Gantrisin is effective against both gram-positive and gram-negative pathogens. It is soluble in acid urine. No alkalinization or forcing of fluids is needed.

LIPO GANTRISIN usually provides therapeutic antibacterial blood levels for 12 hours with a single dose. Just two doses a day are adequate in most infections. Each teaspoonful of Lipo Gantrisin contains one gram Gantrisin Acetyl, twice the concentration of most aqueous sulfonamide suspensions. Useful in respiratory, localized, systemic, and urinary tract infections, when due to susceptible microorganisms.

HOLLAND-RANTOS COMPANY, INC. — Sunset Room
New York, New York — Booth 36

Physicians interested in Medical Contraception are invited to discuss with H-R representatives latest information on laboratory and clinical data concerning efficacy of KOROMEX products.

Featured also will be the trichomonicidal, fungicidal and bactericidal NYLMERATE Jelly and Solution Concentrate, as well as medicated HOLLANDEX Silicone OINTMENT with Natural Vitamins A and D—a new skin first-aid for infants, children and adults.

JACKSON-MITCHELL PHARMACEUTICALS, INC.
Culver City — Boulevard Raam—Booth 86

Jackson-Mitchell Pharmaceuticals are exhibiting MEYENBERG EVAPORATED GOAT MILK, MEYENBERG POWDERED GOAT MILK, the natural substitute milk in cow milk allergies, and HI-PRO, a high protein, low fat, powdered cow's milk.

Chilled, refreshing Goat Milk is being served so you can taste its pleasant flavor.

New Literature on all products is available.

ROGER JESSUP CERTIFIED FARM
Glendale — Sunset Room Booth 17

The display will consist of framed pictures showing the actual production methods and processes and feeds utilized in Certified Milk. Also, will demonstrate laboratory controlled steps to guarantee quality of Certified Milk.

LEDERLE LABORATORIES
New York, New York — Sunset Raam Booth 33

You are cordially invited to visit the Lederle Booth where our Medical Representatives will be in attendance to provide the latest information and literature available on our line.

Featured will be Achromycin, Diamox, Vitamins, Pathilon, Varidase and many other of our dependable quality products.

LIEBEL-FLARSHEIM OF CALIFORNIA, INC.
Beverly Hills — Sunset Room Booth 54

Liebel-Flarsheim of California, Inc., cordially invites you to visit the booth in which their latest electromedical-electrosurgical equipment will be exhibited. We ask particularly that you stop and see the L-F BasalMeteR, the first automatic, self-calculating metabolism unit ever offered. Capable representatives will be on hand at all times.

ELI LILLY AND COMPANY
Indianapolis, Indiana — Boulevard Room Booths 75 and 76

You are cordially invited to visit the Lilly exhibit located in Booths 75 and 76. The display will contain information on recent therapeutic developments. Lilly sales people will be in attendance. They welcome your questions about Lilly products.

J. B. LIPPINCOTT COMPANY
Philadelphia, Pennsylvania — Ballroom Fayer Booth 10

J. B. Lippincott Company presents, for your approval, a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than 100 years of traditionally significant publishing.

LLOYD BROTHERS, INC.
Cincinnati, Ohio — Sunset Roam Booth 49

RONCOVITE, DOXINATE, and DOXINATE with DANTHRON, original products of Lloyd Research, will be featured at this display. Lloyd representatives will present the latest clinical studies on Roncovite, the first true hematopoietic stimulant as well as the complete story of Doxinate, the new nonlaxative method of preventing and treating constipation.

LOV-É BRASSIERE COMPANY
Hallywood — Boulevard Raam Baath 107

You are invited to view our complete line of custom-fitted brassieres designed to provide corrective support for specific breast conditions in exact accordance with the physician's instructions. We also would like to show you our new and improved breast prosthesis, the LOV-É "TWIN" breast form. This new form provides adjustable weight for perfect balance, ideal for all-occasion wear, custom-fitted and weight adjusted to the individual's need. Our Special Representative will be happy to greet you and answer any questions.

MALTBIE LABORATORIES
Belleville, New Jersey — Ballroam Fayer Boath 9

You are cordially invited to visit the Maltbie booth to discuss our products with our representatives. Featured items will be DESENEX, the safest and most effective fungicide; CHOLAN V, for maximal hydrocholeresis with effective spasmolysis, and BIFRAN, for control of obesity and associated biliary disturbance.

MARLYN COMPANY, INC.
Los Angeles — Sunset Room Booth 29

The Marlyn Co., Inc. extends a cordial invitation to register at Booth 29. A staff of our trained representatives will be on hand to supply information or service on Marlyn products. TESTESTRIN and GYNBEN will be featured.

THE S. E. MASSENGILL COMPANY
San Francisco — Sunset Raom Booth 15

A visit to the Massengill exhibit will provide you with some interesting clinical information concerning control of hypercholesteremia by medication. Also, additional information on Homagenets, the homogenized vitamins in solid form, and Adrenosem for capillary bleeding.

McNEIL LABORATORIES, INC.
Philadelphia, Pennsylvania — Ballroam Booth 57

Members of the California Medical Association are cordially invited to attend our Booth 57, Mr. H. A. Harley in charge. Products to be featured are: Tylenol, Butiserpine, Butisol Sodium, Flexin and Butibel.

MEAD JOHNSON & COMPANY
Evansville, Indiana — Sunset Raom Booth 12

In the Mead Johnson booth, specially trained representatives will be ready to tell you about these product "families":

1. The Mead Johnson Formula Products Family—including ready-to-use Lactum and Olac for routine infant feeding, as well as Dextri-Maltose.

2. The Deca Vitamin Family—3 convenient dosage forms for comprehensive vitamin protection of infants and children.

3. The Colace Family—providing a new approach in preventing and treating constipation by keeping stools soft for easy passage.

MEDCO PRODUCTS CO.
Tulsa, Oklahama — Ballroam Booth 61

The Medco-Sonlator will be featured at this meeting. The Medco-Sonlator combines the familiar Medcolator with an exceptionally fine Ultra-sound unit. By bringing the Medcolator current through the sound head, the operator is able to exploit the trigger area technique to the fullest. Factory representatives will be on hand to answer your questions.

MEDIC ALERT COMPANY — Sunset Room
Turlock — Booth 53

The Medic Alert Company is introducing the first safety bracelet of its kind. The Trademark on its face consisting of the words "Medic Alert" separated by a red caduceus will be universally recognized as a warning emblem. On its back will be engraved the wearer's individual medical problem such as: Diabetes, epilepsy; allergy to certain drugs (horse serum, penicillin, etc.); taking digitalis, anticoagulants, antibuse, etc.; presence of therapeutic pneumothorax, pneumoperitoneum, uretero-intestinal anastomoses, etc.

It will not only protect the individual, but assist doctors and hospitals in the management of emergencies, and protect police officers from making many false arrests.

THE MEDICAL PROTECTIVE COMPANY — Ballroom
Fort Wayne, Indiono — Booth 73

Malpractice Prophylaxis. In California in 1956 no policyholder of The Medical Protective Company suffered a loss in excess of policy coverage. This reflects our country-wide experience in which policyholders show less jeopardy from malpractice litigation today than they did thirty years ago. Little more than one-third as many suits were filed against The Medical Protective Company's policyholders in 1956 as were filed in 1926. This excellent record we attribute to our complete 3-point protective program of Prevention, Defense and Proper Protection against Loss—on an Individual, Personal and Confidential basis. Specialized Service makes our doctor safer.

MERCK & CO., INC. — Boulevord Room
Rohwoy, New Jersey — Booths 82 ond 83

"40-Plus" Exhibit: Using the theme "from forty to sixty . . . the future health of the aging and aged is largely determined," Merck dramatically presents physical systems influenced by vitamins, together with conditions common to the "40-Plus" Patient which are alleviated by vitamins. Graphics suggest to the physician ways in which vitamins can help make his patients' "40-Plus" years "their most significant years."

MERCK & CO., INC. — Boulevord Room
Rohwoy, New Jersey — Booth 97

Vitamin B_{12} Exhibit. Important prophylactic and therapeutic uses of Vitamin B_{12} are presented.

MERCK SHARP & DOHME — Ballroom
Philodelphio, Pennsylvonio — Booth 71

The Merck Sharp & Dohme exhibit presents highlights on steroid therapy featuring the newer adrenal cortical steroid preparations in endocrine disorders, collagen diseases, respiratory allergies, eye diseases and skin conditions.

Research developments in the field of antibacterial agents are of clinical significance.

Expertly trained personnel will be pleased to discuss advanced clinical reports on a new therapeutic agent which may be described as a "mood stabilizer."

WM. S. MERRELL COMPANY — Boulevord Room
Cincinnoti, Ohio — Booth 85

Merrell representatives will be on hand to discuss Tace, a new distinctive estrogen and Meratran, a new unique antidepressant.

Please stop at our booth, they will be happy to talk with you.

MILES REPRODUCER COMPANY — Ballroom Foyer
New York, New York — Booth 4

Case histories, house calls, hospital rounds, lectures, conferences, group therapy, interviews, and dictation may now be recorded at a 60-foot radius with Walkie-Recordall, Briefcase-Conference-Recorder, a lightweight self-powered battery-recorder-transcriber. It operates in or out of the closed briefcase; in car, train, plane while mobile or stationary. Records clearly in noisy places as interferences do not block recording. No installation or acoustical room conditions required. The Voice-Activated "Self-Start-Stop" feature automatically starts and stops the recording from microphone or telephone, thus eliminating supervision and the recording of silent periods. While facilities for transcribing are available, transcription may be eliminated due to ease of handling identifiable, compact, indexed recordings without rewinding. Up to 8 hours of permanent recordings may be accumulated at intervals on an endless belt costing 25 cents.

MILEX-FERTILEX COMPANY — Sunset Room
Los Angeles — Booth 50

We invite your attention to our new cancer detection program. Among other items of interest are numerous products to aid fertility, and folding corrective pessaries.

MILLER SURGICAL COMPANY — Boulevord Room
Chicogo, Illinois — Booth 108

Featuring electrically lighted otoscopes, ophthalmoscopes, eye-spuds, vaginal and rectal scopes in various sizes. Plastic or stainless steel. A portable Electro-Scalpel weighing only 19 lbs., for cutting, desiccating, fulgurating and coagulating. Be sure to see our new vaginal speculum with built-in smoke ejector—also infant pelvic and rectal instruments. A nasal coagulator with built-in suction.

MONROE CALCULATING MACHINE CO., INC.
Son Froncisco — Boulevord Room—Booths 87 and 88

THE C. V. MOSBY COMPANY — Boulevord Room
St. Louis, Missouri — Booth 112

The C. V. Mosby Company of St. Louis will exhibit its complete line of medical books and journals in Booth 112. Included among the newer titles will be: Richards *Surgery for General Practice*, Lisser-Escamilla *Endocrinology Atlas*, Sodi-Pallarés *New Bases of Electrocardiography*, Leider *Practical Pediatric Dermatology*, Ulett-Goodrich *Synopsis of Contemporary Psychiatry*, Cordonnier *Clinical Urology for General Practice*, and Meakins *The Practice of Medicine*.

THE NATIONAL DRUG COMPANY — Sunset Room
Philodelphio, Pennsylvonio — Booth 47

The National Drug Company presents products of original research at Booth 47. These "National" specialties include Parenzyme Intramuscular Trypsin, the direct, antiedema, antiinflammatory agent which has set new standards for the rapid and effective treatment of traumatic edema and acute inflammation. Parenzyme Intramuscular Trypsin is especially valuable in treating traumatic wounds, skin ulcers, ophthalmic inflammations, thrombophlebitis and phlebothrombosis. Hesper-C Prenatal, the only complete preparation with hesperidin and ascorbic acid as capillary-protective factors plus established prenatal vitamin and mineral supplementation. Hesper-C Prenatal with capillary-protective factors is a precaution in normal preg-

nancy; a necessity in habitual abortion. AVC Improved, effective in trichomonal, bacterial and monilial vaginal infections, is also featured.

THE NETTLESHIP COMPANY — Sunset Room
Los Angeles — Booth 13

Administrators of ten professional liability insurance programs for County Medical Associations in Southern California, and qualified administrators for group accident and sickness insurance programs in eight Southern California County Medical Associations. Qualified representatives available to discuss problems pertaining to hospital or individual professional liability coverage, accident and sickness, or other types of insurance.

Literature, which will assist in the prevention of claims and various forms to be used to protect, as far as possible, against malpractice claims.

NORDMARK PHARMACEUTICAL LABORATORIES, INC.
Irvington, New Jersey — Boulevard Room—Booth 81

New Iron Therapy—FERRONORD tablets, a brand of ferroglycine sulfate complex iron—will be featured. Extensive research has developed an aminoacetic complex of iron which supplied ferrous ions protected against oxidation in pH ranges of stomach and intestine. FERRONORD provides for: 1. Optimal absorption of ferrous ion, 2. Freedom from the side effects usually associated with iron therapy, 3. Rapid increase of serum iron levels in days, 4. Correspondingly higher hemoglobin levels in days. So well tolerated, FERRONORD should be given on an empty stomach, or between meals, for optimal absorption.

ORGANON, INC. — Boulevard Room
Oronge, New Jersey — Booth 77

Physicians are cordially invited to visit the Organon booth for information on Cortrophin-Zinc and Organon new products. Cortrophin-Zinc is the exclusive Organon brand of corticotropin-zinc hydroxide providing the complete physiologic action of ACTH, enhanced, prolonged, and with convenience of administration never before possible. Vistabolic is a new gerontotherapeutic preparation intended for geriatric patients who need antistress, anabolic, and nutritional support. Literature and samples of products will be available.

ORTHO PHARMACEUTICAL CORP. — Boulevard Room
Rariton, New Jersey — Booth 80

Ortho cordially invites you to Booth 80 where the well-known line of obstetrical and gynecological pharmaceuticals will be on display. Particular emphasis will be placed on Ortho preparations for conception control. Ortho representatives will be on hand to offer pertinent information on their products.

PARKE, DAVIS & COMPANY — Ballroom
Detrait, Michigan — Booth 64

Medical service members of our staff will be in attendance at our exhibit for consultation and discussion of various products of particular interest to members of the Association. Important specialties, such as Penicillin S-R, Benadryl, Chloromycetin, Ambodryl, Dilantin Suspension, Vitamins, Oxycel, Milontin, Amphedase, Thrombin Topical, Eldec, etc., will be featured. You are cordially invited to visit our exhibit.

PERSON & COVEY — Ballroom Foyer
Glendale — Booth 2

Person & Covey representatives will be on hand to discuss our most recent medical specialties with you.

PICKER X-RAY — Ballroom
Los Angeles — Booth 65

THE PURDUE FREDERICK COMPANY — Ballroom
New York, New York — Booth 69

The Purdue Frederick Company will feature:

SENOKOT Tablets and Granules—new nonbulk, nonirritating constipation corrective acting selectively on the parasympathetic (Auerbach's) plexus in the large bowel, physiologically stimulating the neuromuscular defecatory reflex.

PRE-MENS—the multidimensional premenstrual tension therapy.

SOMATOVITE—clinically proved to promote weight gains, increase appetite and reduce hyperactivity and restlessness.

SIPPYPLEX—the modern comprehensive therapy for peptic ulcer.

COLPOTAB—a tested effective Tyrothricin trichomonacide, and

CHLOROGIENE—a hygienic douche formulation.

REAL FRESH MILK, INC. — Sunset Room
Visolia — Booth 48

R. J. REYNOLDS TOBACCO COMPANY — Boulevard Room
Winston-Salem, North Carolino — Booth 84

Welcome to the R. J. Reynolds Tobacco Company exhibit! You are cordially invited to receive a cigarette case (monogrammed with your initials) containing choice of CAMEL, WINSTON Filter, Menthol Fresh SALEM, or CAVALIER King Size Cigarettes.

RITTER CO., INC. — Sunset Room
Rochester, New York — Booth 22

More and more physicians are finding routine examinations and treatments in gynecology, proctology, urology, E.E.N.T., and all other phases of medicine, easier through using Ritter Motor Operated "Multi-level" Tables.

This preferred office equipment enables you to treat *more* patients *more* thoroughly with *less* effort in *less* time.

Visit the Ritter display and let us demonstrate and explain to you the many benefits derived from this investment in a lifetime of convenience and comfort for both doctor and patient.

A. H. ROBINS COMPANY, INC. — Boulevard Room
Richmond, Virginia — Booth 110

The A. H. Robins Company exhibit is introducing Donnagesic Extentabs, the first extended action codeine tablets, providing 10 to 12 hour relief of pain on a single dose. Also shown are Ambar Tablets and Extentabs—indicated in control of obesity and elevation of mood; and for peptic ulcer, Robalate—effective antacid now available in palatable, free-flowing liquid form as well as in tablets, and Donnalate—which combines Robalate and the Donnatal formula.

J. B. ROERIG AND COMPANY — Sunset Room
Chicago, Illinais — Booth 43

J. B. Roerig and Company, Booth 43, will feature ATARAX, the new "Peace of Mind" drug. It's an all new chemical

and is specially indicated for the "more normal" person, to bring relief from the common everyday anxieties and annoyances. Co-featured with ATARAX will be BONADOXIN, the antiemetic for relief of the nausea and vomiting of pregnancy; also effective in postanesthetic nausea, Menieres Syndrome and postradiation sickness. Literature and samples available at the booth, which you and your friends are cordially invited to visit.

ROSS LABORATORIES — Sunset Room
Columbus, Ohio — Booth 55

See write-up under Similac.

SANBORN COMPANY — Ballroom Foyer
Waltham, Massochusetts — Booth 3

Visitors at the Sanborn Company Booth 3 will have full opportunity to see and have demonstrated our clinical diagnostic instruments such as the popular Viso-Cardiette and Metabulator.

In addition, there will be demonstrations and/or data available on the Vector System, Viso-Scope, and Transducers for pickup of pressure and other physiologic events; and on the Twin-Viso, Twin-Beam, and the "150" (and other) series of single and multi-channel direct-writing and photographic recording systems.

SANDOZ PHARMACEUTICALS — Boulevard Room
Honover, New Jersey — Booth 91

FOR YOUR HEADACHE PATIENTS THINK OF SANDOZ PRODUCTS—Cafergot, Cafergot PB, Fiorinal, Gynergen and DHE-45. The greatest number and the widest variety of headaches can now be treated with one of our headache products.

SANDOSTENE—a specific approach for relief from itching. Sandostene acts in the logical way by its effectiveness due to its antipermeability, anticholinergic, and antihistaminic action.

BELLADENAL SPACETAB—a new departure in sustained antispasmodic-sedative therapy. The only sustained action tablet that can be adjusted to your patients' needs, giving increased convenience and greater economy for your patient.

CEDILANID-D—the parenteral digitalis that is recommended by leading medical textbooks.

W. B. SAUNDERS COMPANY — Ballroom
Philodelphia, Pennsylvonia — Booth 74

Along with the Complete Saunders line there are these, new and of special interest to Clinicians: *Current Therapy 1957;* Tracy: *The Doctor as a Witness;* Nadas: *Pediatric Cardiology;* Artz & Reiss: *Treatment of Burns;* and a brand new, completely revised edition of the familiar *Dorland's Medical Dictionary.*

JULIUS SCHMID, INC. — Boulevard Room
New York, New York — Booth 100

An interesting and informative exhibit featuring RAMSES Flexible Cushioned Diaphragm; RAMSES Vaginal Jelly; VAGISEC Jelly and Liquid, the recent development of Carl Henry Davis, M.D., and C. G. Grand for Vaginal trichomoniasis therapy; and XXXX (Fourex) Skin Condoms, RAMSES and SHIEK rubber condoms for the control of trichomonal reinfection.

G. D. SEARLE & CO. — Ballroom
Chicago, Illinois — Booth 66

You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle Products of Research.

Featured will be Nilevar, the new anabolic agent; Rolicton, the new safe, nonmercurial oral diuretic; Vallestril, the new synthetic estrogen with extremely low incidence of side reactions; Banthine and Pro-Banthine, the standards in anticholinergic therapy; and Dramamine, for the prevention and treatment of motion sickness and other nauseas.

SICULAR X-RAY — Ballroom
Los Angeles — Booth 65

SIMILAC — Sunset Room
Columbus, Ohio — Booth 55

ROSS LABORATORIES: CURRENT CONCEPTS IN INFANT FEEDING, stressing the critical aspects of preventive care. Your Similac Representative will be happy to discuss the role of physiologic feeding in providing good growth, sound development, and optimum clinical benefits. Copies of the latest Ross Pediatric Research Conference Reports are available.

SMITH, KLINE & FRENCH LABORATORIES — Sunset Room
Philodelphio, Pennsylvonia — Booth 28

The SKF booth this year highlights three new compounds. "Compazine" is a mild tranquilizer without side effects and without depression; furthermore "Compazine" is a very effective antiemetic for nausea and vomiting of many etiologies. "Sul-Spansion," indicated for respiratory, urinary tract and other systemic infections, is unique not only in content (sulfaethylthiadiazole) but also in form (sustained release suspension). "Ecotrin" is SKF's Duentric-coated tablet—an aspirin medication that eliminates common gastric distress.

Featured also are "Cytomel" and "Thorazine," both useful in many and varied indications. Stop at the SKF booth; our representatives will be most willing to give you literature and information.

E. R. SQUIBB & SONS — Boulevord Room
New York, New York — Booth 109

J. W. STACEY COMPANY — Ballroom Foyer
Son Froncisco — Booths 6 ond 7

Stacey's, established over a quarter of a century ago, provides the doctors in the West with an efficient source for medical books of all publishers. At Booths 6 and 7 you will find displayed the latest in medical literature. You are cordially invited to browse at your leisure.

STAYNER CORPORATION — Ballroom Foyer
Berkeley — Booth 8

Stayner Laboratories warmly invites you to visit its booth and discuss its educational campaign warning the public against the dangers of accepting medical advice from door-to-door peddlers, mail order promoters, so-called health food stores and other nonprofessional sources.

Our representatives will appreciate an opportunity to advise you of the merits and advantages of Stayner's new copyrighted Vitamin Bonus Plan.

Stayner Corporation hopes your attendance here at the convention will be enjoyable and pleasant.

STUART COMPANY — Sunset Room
Posodeno — Booth 16

The Stuart Company will feature the two-way treatment for constipation, DIALOSE, at their booth. In addition, literature and samples will be available for other leading products in the Stuart line such as STUART FORMULA, SULADYNE, NEOTINIC, OREXIN and MULVIDREN.

You are cordially invited to visit this display.

SWIFT & COMPANY — Sunset Room
Chicago, Illinois — Booth 41

Strained Ham, a unique flavor addition to the varieties of Meats for Babies, is announced by Swift & Company. The sweet flavor goodness of Swift's Premium Ham, ground to a smooth, creamy texture, is the newest variety of Strained Meats for infants. See and taste it at the Swift exhibit. You are cordially invited to examine the complete line of these 100% meat products, as well as Swift's Strained Egg Yolks and Swift's Strained Egg Yolks & Bacon for babies; to discuss with representatives, Swift's clinical research program in connection with meat in the infant diet.

TESTAGAR & CO., INC. — Sunset Room
Detroit, Michigon — Booth 40

Testagar & Co., Inc., is proud to announce that they will assume the manufacture and sales of the Fellows Medical Manufacturing Corp. line of pharmaceutical specialties in the United States. Fellows' Chloral Hydrate products will be featured as well as some new Testagar pharmaceutical specialties.

THURSTON LABORATORIES — Boulevord Room
Los Angeles — Booth 104

Thurston Laboratories will feature the following: two products in the field of ascorbic acid-bioflavonoid therapy, AMITIN Tablets and BIO-C Capsules; a high protein-vitamin food supplement for geriatric and convalescent use; a laxative tablet combining the active laxative principle of prunes with a new fecal softening agent. Thurston Laboratories have a background of 35 years experience in nutrition, having served the profession since 1922. This includes 10 years of government-sponsored nutritional research. Qualified personnel will be present to discuss nutritional problems pertaining to your practice.

U. S. VITAMIN CORPORATION — Sunset Room
New York, New York — Booth 39

Exhibit features C.V.P., an exclusive water-soluble citrus bioflavonoid compound with ascorbic acid . . . for restoring and maintaining capillary integrity. Corrects or minimizes capillary abnormality and bleeding associated with diabetes, hypertension, epistaxis, purpura, gingivitis and certain forms of gastrointestinal, rectal and vaginal bleeding. Effective therapy in habitual and threatened abortion.

Professional samples and literature distributed also on our complete line of nutritional and pharmaceutical specialties.

THE UPJOHN COMPANY — Boulevord Room
Kolomozoo, Michigon — Booth 90

Members of the medical profession are invited to visit the Upjohn booth where members of The Upjohn Company professional detail staff are prepared to discuss subjects of mutual interest.

WALKER LABORATORIES, INC. — Sunset Room
Mount Vernon, New York — Booth 26

PRECALCIN, PRECALCIN LACTATE, BACIMYCIN OINTMENT, ADCETS, CORTISPRAY, PINCETS and HEDULIN will be displayed at the exhibit. PRECALCIN LACTATE is the phosphorus-free comprehensive multivitamin-mineral formula with "built-in" antianemia factors for use during pregnancy. HEDULIN is the substantially safe oral-anticoagulant described in recent papers and complete reprint portfolios will be available to all registered physicians.

WALLACE LABORATORIES — Boulevord Room
New Brunswick, New Jersey — Booth 106

MILTOWN, the original meprobamate, will be featured at the Wallace Laboratories' exhibit, Booth 106. It is a C.N.S. normalizer with muscle relaxing action. MILTOWN is of value in treating anxiety-tension states, muscle spasm, sleeplessness due to worry and certain neurological disorders, as well as a multitude of organic pathologies in which there is a psychosomatic component. MILTOWN is also reported to be of value in petit mal epilepsy, and in cases of cerebral palsy where muscle spasm is a particular problem.

The drug acts on the central nervous system only and does not affect autonomic functions. Addiction and tolerance have not been reported. Side effects are minimal and there are no known contraindications. You are cordially invited to discuss the drug further at the booth.

WALTERS SURGICAL COMPANY — Sunset Room
Los Angeles — Booth 46

WESTERN SURGICAL SUPPLY COMPANY — Boulevord Room
Los Angeles — Booths 92 ond 93

Physicians' and Surgeons' supplies of all kinds, including furniture, stainless steel and white enamelware, instruments, surgical dressings, and laboratory supplies.

WESTINGHOUSE ELECTRIC CORPORATION
Boltimore, Morylond — Bollroom Foyer—Booth 1

Have you ever seen a motor-driven radiographic-fluoroscopic table where the fluoroscopic assembly completely disappears during radiography?

See this feature demonstrated with the Westinghouse Diaflex Table. The hide-a-way parking of the fluoroscopic tower (spot film device as well) gives clear-table radiography. This exclusive feature assures fast and easy positioning during radiography—no shock proof cable interference at any time.

The Diaflex Generator design, with IDS (Inherent Density Stabilization), provides automatic density compensation so that fluctuations in line voltage do not cause ruined films.

With IDS, the selected milliampere-seconds (MAS) is held constant regardless of fluctuations in tube current. With IDS, changes in selected kilovoltage (KVP) due to line voltage fluctuations are minimized and film quality is maintained. IDS creates simplification of operating procedure.

WESTWOOD PHARMACEUTICALS — Boulevord Room
Buffolo, New York — Booth 94

Fostex Cream and Fostex Cake are new therapeutically effective medications for the treatment of acne, dandruff and seborrheic dermatitis. They contain Sebulytic—unique new combination of surface active cleansing and

wetting agents with remarkable antiseborrheic, keratolytic and antibacterial action.

In acne Fostex Cream and Fostex Cake (used in place of soap) degrease, peel and degerm the skin . . . unblock pores, remove blackheads and help prevent pustule formation.

In dandruff Fostex Cream (used as a therapeutic shampoo) rids the "itchy scaly scalp" of dandruff, excess oil and seborrheic dermatitis.

Specimen packages and clinical data available at our booth.

WHITE LABORATORIES, INC. — Ballroom
Kenilworth, New Jersey — Booth 63

Stimulate appetite—improve muscle tone—speed convalescence through a more efficient utilization of protein. "Correct proportion of amino acids to each other in the diet is more important than total protein intake." White's L-lysine preparations—Lactofort, Cerofort Tablets, Cerofort Elixir and Cerofort Drops—raise milk, cereal and vegetable proteins to high values.

WINTHROP LABORATORIES — Sunset Room
New York, New York — Booth 37

You are cordially invited to visit our Booth 37 at the meeting of the California Medical Association, where we are featuring Isuprel, the efficient and convenient bronchodilator, Tablets for sublingual use, solution for inhalation.

WOODSIDE ACRES — Boulevard Room
Redwood City — Booth 111

Woodside Acres Hospital is a facility designed and built exclusively for the treatment of alcoholism by use of the Conditioned Response Therapy with supportive psychological therapy.

QUALIFICATIONS/REQUIREMENTS FOR REGISTRATION

(a) All M.D.'s with credentials showing that they hold valid license to practice medicine. (Membership card in C.M.A.; county medical society/association or A.M.A. membership card.)

(b) Medical students will be admitted upon presentation of credentials from their medical schools identifying them as medical students. (A membership card of the Student American Medical Association or letter from their dean's office.)

(c) Medical secretaries will be admitted upon presentation of a letter from the physician-employer.

(d) Pharmacist mates and other military personnel of a like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer.

(e) Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), registered nurses (R.N.), student nurses, x-ray technicians, laboratory technicians, dietitians, allied public health personnel, and others will be admitted provided they have proper identification.

(f) *All questions on admission will be passed upon by a member of the Committee on Registration who will be present at the desk.*

OFFICERS AND DELEGATES

General Officers

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FRANK A. MacDONALD, Sacramento.....President-Elect
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DWIGHT L. WILBUR, San Francisco.....Editor
JOHN HUNTON, San Francisco.....Executive Secretary
PEART, BARATY & HASSARD.....Legal Counsel

House of Delegates—54th Annual Session

TOTAL DELEGATES (355)

DELEGATES EX-OFFICIO (42)

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J. Norman O'Neill, Los Angeles.....Vice-Speaker of House of Delegates
Donald D. Lum, Alameda.....Chairman of Council
Albert C. Daniels, San Francisco.....Secretary-Treasurer
Dwight L. Wilbur, San Francisco.....Editor
Francis E. West (1958).....Councilor 1st District
Omer W. Wheeler (1959).....Councilor 2nd District
H. Clifford Loos (1957).....Councilor 3rd District
E. E. Wadsworth, Jr. (1958).....Councilor 4th District
Robert O. Pearman (1959).....Councilor 5th District
Donald C. Harrington (1957).....Councilor 6th District
James H. McPharlin (1958).....Councilor 7th District
Samuel R. Sherman (1959).....Councilor 8th District
Donald D. Lum (1957).....Councilor 9th District
Warren L. Bostick (1958).....Councilor 10th District
Ralph C. Teall (1959).....Councilor 11th District
Arthur E. Varden (1957).....Councilor-at-Large
Ivan C. Heron (1957).....Councilor-at-Large
Hollis L. Carey (1958).....Councilor-at-Large
Edward C. Rosenow, Jr. (1958).....Councilor-at-Large
Arthur A. Kirchner (1959).....Councilor-at-Large
T. Eric Reynolds (1959).....Councilor-at-Large

ELECTED DELEGATES (313)

Delegates	*Alternates*
Alameda-Contra Costa County (26)	
Allen, Dorothy M.	Bartlett, J. C.
Attwood, C. J.	Benson, K. W.
Baxter, Philip N.	Blum, John
Cobb, B. Otis	Brode, William
Crockett, H. C.	Bryan, Charles
Crum, R. Abbott	Chapman, Robert W.
Dodds, Donald	Dimmler, Charles L., Jr.
Dozier, Thomas J.	Etheredge, Samuel
Dugan, David	Ferrier, Philip
Ellis, Grant	Fornoff, Homer
Fraser, L. H.	Harms, Herbert E.
Gadwood, Bernard B.	Hart, Charles
Graeser, James B.	Hoskins, H. Dean
Hadden, Malcolm	Irvine, George S.
Harvey, Harold	Jones, William G. A.
Henderson, Ernest W.	Kerns, Claude L.
Hudson, Charles	Lamb, Gordon R.
Kaiser, William	Langstroth, Lovell, Jr.
Kern, Max	Mason, John E.
Leet, Robert S.	Pfefer, Lionel
Maloney, Harold P.	Royce, Byron
Morrison, John G.	Slattery, Robert
Richards, Dexter, Jr.	Snook, Helen Jean
Shumaker, Paul	Spidell, Haydon J.
Thebaut, Maxwell M., Jr.	Stephens, Bruce
Truman, Stanley R.	Weeden, William
Butte-Glenn County (2)	
Elmendorf, Thomas	Chiapella, William C.
Lawrence, W. S.	Goodwin, Paul
Fresno County (5)	
Argo, W. L.	Burg, Fred A.
Howard, Arthur F.	Kass, Robert
Murray, John F.	Logan, J. A.
Smith, Robb	Masten, J. Malcolm
Vaughan, Robert	Whitten, Richard

Delegates	*Alternates*
Humboldt County (2)	
Olson, Fred A.	Eley, James S.
O'Neil, Francis H	Poska, Theodore A.
Imperial County (2)	
Richardson, Gene T.	Streuter, Milton A.
Tepper, Sidney M.	Westcott, Robert J.
Inya-Mono County (2)	
Mason, J. Lloyd	Curtis, C. C.
Scott, C. L.	Hough, Victor
Kern County (4)	
Ogden, Roderick A.	Ellis, John F.
Patrick, Robert A.	Forney, Robert
Strongin, Seymour	Freestone, J. V.
Vaughan, J. E.	Seibly, J. S.
Kings County (2)	
Chamlee, William F.	Bridwell, W. S.
Sorensen, N. F.	Kerr, E. E.
Lassen-Plumas-Modac County (2)	
Burnett, C. I.	Bross, Willard S., Jr.
McKenney, Philip W.	Davis, Fred J., Jr.
Las Angeles County (123)	
Albaugh, Clarence H.	Abbey, John D.
Alesen, Lewis A.	Adams, Lawrence
Alsberge, Marden A.	Albin, Myer Stanley
Anhalt, James E.	Allin, John G.
Asher, Leonard M.	Ambler, A. Carleton
Ayres, Samuel, III	Andrews, Herbert J.
Bailey, Wilbur	Bailey, Arthur T.
Bay, Max W.	Baker, Francis J.
Beers, Reid L.	Ballard, William R.
Bennett, Ralph L.	Beahm, E. L.

Delegates	*Alternates*
Los Angeles County (continued)	
Bennett, Terry C.	Beckenbach, Madelene
Blackmun, Robert L.	Beckner, George L.
Boehme, Earl J.	Beckner, Gordon B.
Bradford, Fred E.	Berne, Clarence J.
Breitman, Harry B.	Bigler, Roscoe B.
Bullock, Lewis T.	Bills, Jack W.
Burwell, L. C.	Blong, Peter H.
Carter, Robert V.	Bowen, Gordon T.
Caruso, Tenero D.	Boyd, Harold
Cherry, Clifford B.	Boyd, Robert I.
Coffelt, R. Wendell	Brayton, Donald F.
Cole, Orville W.	Brown, George E.
Conti, James G.	Bumpus, L. Dudley
Cook, Wells C.	Burns, James J.
Cooper, Finis G.	Byrne, Ralph V.
Cosgrove, Jay B.	Camp, John D.
Craig, Lyle G.	Cardey, Norman L.
Crane, Edward H., Jr.	Carlson, Carroll C.
Crane, Jay J.	Cobb, Dudley M., Jr.
Crowl, Verne C.	Collins, Mary Ellen
Cunnane, Philip J.	Copp, Newton H.
Dalton, Burr	Cronemiller, Ray E.
Desimone, Leon O.	Crosley, Willard B.
Doyle, James C.	Crowe, Harold E.
Drury, Robert B.	Culbertson, John A.
Durnin, William G.	Daniels, Samuel D.
Einstein, Robert A. J.	Darby, John S.
Ewens, Frederic	Donath, Douglas
Ewing, John Paul	Douglass, George H.
Fisher, Gaylor L.	Dueker, Howard W.
Foster, Paul D.	Eardley, Gene P.
Gairdner, Thomas M.	Earl, Donald H.
Gevurtz, William Sanders	Eisenstein, Edward
Goodhill, Victor	Failing, Joseph Henry
Goodman, Adrian B.	Farrell, Elliston
Gooel, Elmer F.	Flentie, Edgar H.
Graham, William E.	Forde, Wells E. A.
Haining, Robert B.	Foster, Percy A.
Hamilton, John B.	Franklin, L. Ben
Hankins, Joseph W.	Gaspard, Frederic J.
Helms, Robert W.	Gilfillan, Charles
Hill, Malcolm R.	Glazier, McCleery
Hoagland, Paul I.	Godwin, Robert W.
Hoffman, Arthur M.	Golenternek, Dan
Hoffman, Eugene F.	Gordon, Norman W.
Hohl, Elizabeth Mason	Gray, Arthur
Holland, Frank F.	Grubbs, William E.
Hope, Robert B.	Hallstone, Victor E.
Horner, Howard E.	Hansen, Phil
Jensen, Arnold L.	Heckel, Donald Q.
Johnson, Fordyce	Henry, William
Kaplan, Louis H.	Hiemstra, Wybren
Keller, Ernest A., Jr.	Huffman, L. Dale
Kelley, Walter William	Hughes, Clifford M.
Kelso, Raymond W.	Hutter, Charles G.
Knox, Stuart C.	Johnson, Moulton K.
Korn, Bernard J.	Jones, Glen Ellis
Kredel, Richard A.	Judkins, Lance W.
Laughlin, T. Jackson	Kaftan, Ludwig L.
LeValley, Thomas A.	Katz, Milton A.
Levy, Charles C.	Kaufman, Reuben L.
Lloyd, O. Dale	Kelly, Robert F.
Loopesko, Eugene	Knupp, Wilber S.
Ludwig, J. Lafe	Krouse, John A.
Macdonald, Ian	Lange, Henry J.
Martin, Louis E.	Laue, Richard J.
Mauer, Edgar F.	Lecky, Jim H.
McBane, J. Kendall	Le Moncheck, Edward
McDonald, Angus C.	Linsman, Joseph F.
McNair, J. Douglas	Luck, J. Vernon
Merchant, Edward B., Jr.	Lynn, Theodore A.
Morrow, James J.	Matlock, Richard A.
Mueller, Edward J., Jr.	McClure, Ross T.
Nation, Earl F.	McDowell, Allyn J.
Nugent, Maurice W.	McIntyre, Charles H.
O'Connor, Joseph P.	McNeil, Robert J.
Otto, Frank W.	McNiel, Edwin E.
Padgett, W. DeGrove	McQueen, John B.
Petersen, Harold E.	Meyers, Marvin H.
Pheasant, Homer C.	Mortensen, Elmer S.
Pindell, Merl Lee	Neale, Roderick M.
Prichard, Hubert J.	Packer, George L.
Quinn, William F.	Parker, Joseph A.
Randall, Morton H.	Paxton, Frank F.
Regan, James F.	Pearson, George W.
Reyes, J. M. de los	Pettit, Richard D.
Rogers, Wilbur G.	Plimpton, Edwin B.
Rolf, Bruce B.	Pollack, John V.
Rosenbaum, Maurice M.	Rabwin, Marcus H.
Ruddock, John C.	Rolland, Ward M.
Sampson, J. Philip	Russell, John Anthony
Schroeder, Ralph L.	Sanford, Harold E.
Semenov, Herman Z.	Schaeffer, Richard C.
Shaw, Gerald W.	Scott, Walter
Shelton, Robert M.	Shepherd, Allen E.
Shery, Kurt T.	Sinay, Henry R.
Smart, Reginald H.	Stanton, Frank E., Jr.
Smith, Eldon E.	Strouse, Carl D.
Smith, Gordon K.	Thomason, Sidney D.
Snodgrass, Wilfred	Thompson, Walter S., Jr.
Sommer, Melvin L.	Thurber, Packard, Jr.

Delegates	*Alternates*
Los Angeles County (continued)	
Soper, H. Vern	Treusch, Jerome V.
Stein, Justin J.	Turbow, Arthur O.
Stern, Robert Leo	Van Vranken, Bruce
Stokesbary, Delbert L.	Wadsworth, E. E., Jr.
Todd, Malcolm	Waller, Lorenz M.
Turner, Ewing L.	Warren, Earle W.
Tyler, Edward T.	Watson, Robert L., Jr.
Tyroler, Frederic N.	Wigod, David
White, Carroll W.	Welton, Walter F.
Wilson, Warren A.	Williams, Herbert F.
Wiltse, Leon L.	Woodhull, Franklin E.
Witherbee, Harold R.	Zell, Harry J.
Madera County (2)	
Bick, Jack	Cohlan, W. R.
Hall, Gordon C.	Klein, Thomas
Marin County (3)	
Culmer, J. William	Grayson, Thomas L.
Goebel, James	Leininger, C. R.
Wagner, Dallas L.	Smart, William R.
Mendacina-Lake County (2)	
Hill, Thomas P.	Allanson, Patrick
Massengill, James B.	Smalley, Robert B.
Merced County (2)	
Carson, Samuel	Bickell, E. A.
McDowell, B. E.	Buckley, John
Manterey County (3)	
Clark, Howard E.	Husser, Horace
Englehorn, T. D.	Miles, Howard C.
Mitchell, Allen	Moore, Chester G.
Napa County (2)	
Barber, Dale E.	Marchus, Donald B.
Brignoli, Walter H.	Oliver, Wrenshall A.
Orange County (7)	
Galbraith, Harold F.	Altman, Richard F.
Gendel, Samuel	Donaldson, A. Norton
Price, J. B.	Garrett, Robert T.
White, Ralph E.	Hanigan, Thomas E.
Whittaker, L. F.	Mason, Bernard
Wickett, William H.	Pettis, Emmett M.
Wilson, L. E.	Struve, Edgar E.
Placer-Nevada-Sierra County (2)	
Dunievitz, Max	Kindopp, D. M.
Tipton, G. D.	Miller, William
Riverside County (4)	
Aikin, William	Abbott, Donald
Batzle, J. Harold	Clark, Fred
Boylan, Richard N.	Garcia, Robert
Stone, H. H.	Halverson, Glen
Sacramento County (7)	
Berman, A. E.	Chappell, G. E.
Chambers, J. V.	Horn, C. E.
Dozier, Dave F.	Kilroy, Dan O.
Grayson, Charles E.	Martin, J. W.
Ogaard, A. T.	Pope, Glenn A.
Rovane, J. W.	Tainter, E. G.
Yant, James H.	Wallerius, Raymond M.
San Benito County (2)	
Moore, E. N.	Bradt, J. O.
Sheldon, E. C.	
San Bernardino County (6)	
Coughlin, John H.	Halburg, C. T.
Hadley, Carl M.	Hoag, L. G.
Martin, J. Needham	Miano, Ben D. A.
Melone, Frank C.	Marsh, Norman E.
Pelkey, George L.	Ogden, Wendell L.
Sprague, Charles P.	Spelman, George M.
San Diego County (15)	
Carpenter, Walter F.	Averill, Roy S.
Fairchild, L. H.	Hall, Winston C.
Hokr, William K.	Hanna, Curtis M.
Hyde, Charles R.	Irwin, James B.
Isenhour, Roger C.	Knott, James I.
King, Ralph M.	Lauren, George P.
MacLaggan, James	LeDuc, Ector
Moore, A. E.	Maggio, Guy
Newman, Willard H.	Marshall, Glenn L.
Quer, Roy A.	Mullenix, Ralph B.
Phalen, James R.	Nickel, Walter R.
Robinson, Frank H.	Peck, Samuel G.
Rumsey, John M.	Skeoch, Gordon D.
Tancredi, Chester	Soldmann, W. T.
Telford, Joseph W.	Youel, Milo A.

Delegates	*Alternates*
San Francisco County (32)	
Aggeler, Paul	Ashford, John W.
Bender, William L.	Cann, John E.
Birnbaum, Walter D.	Castro, Amos
Bricca, C. R., Jr.	Clark, W. Dayton
Burnham, DeWitt K.	Colyear, Bayard H., Jr.
Callaway, Claude P.	Cowan, John F.
Campbell, Donald M.	Franzi, Antonio J.
Campion, George	Fraser, Alexander F.
Combs, Robert C.	Henry, Margaret
Cox, Francis J.	Hopp, Eugene S.
Fenlon, Roberta	Hurwitz, Samuel
Garland, L. Henry	Jacobs, Alvin H.
Gibbons, Henry, III	Long, Albert E.
Greene, W. Wallace	Long, J. Bradley
Herzog, George K., Jr.	Louie, Stanley
Hosmer, Matthew N.	McKenzie, Roger B.
Lebo, Charles	Newsom, William A.
Moffitt, Herbert C., Jr.	Olsen, Elwood R.
Musser, Don C.	Palmer, Richard
Noble, Charles A., Jr.	Plate, Agnes G.
Olney, Mary B.	Rees, Rees B.
Richards, Victor	Robinson, Saul J.
Rixford, Emmet L.	Rosenberg, Alan J.
Rochex, Francis	Strange, Vance M.
Saunders, J. B. de C. M.	Sumner, William A.
Schaupp, John B.	Thompson, James H.
Schaupp, Karl L., Jr.	Torassa, George L.
Sirbu, A. B.	Trauner, Lawrence M.
Smith, Curtis E.	Washburn, William W.
Talbott, Grace M.	Webb, Eugene
Ward, Robertson	Winternitz, Carl
Williams, A. Justin	Zundell, J. LaMonte
San Joaquin County (4)	
Armanino, Louis P.	Blinn, John F., Jr.
Benn, James J.	Lee, Dora Ames
Mayo, John F.	Longley, J. E.
Noetling, Paul R.	McNally, John T.
San Luis Obispo County (2)	
Middleton, Joseph G.	Ferris, Chalmer W.
Smith, J. Barry	Gazin, Albert
San Mateo County (9)	
Allen, James R.	Armstrong, Charles D.
Brownson, Bradley C.	Boudett, Daniel
Fox, Norman C.	Brown, Henry A.
Haerem, Alf T.	Gray, Logan
Hedden, Alan M.	Holmes, Robert O.
Miller, A. G.	Moore, Ferrall H.
Ray, Hartzell H.	Novak, Frank J.
Shidler, Frederic P.	Sawtell, James
Smith, Harry F.	Thompson, William H.
Santa Barbara County (4)	
Cord, Robert I.	Brown, Harry E.
Hill, Thurman K.	Burgess, Leonard B.
Olsen, Arthur	Hammel, Max
Riparetti, P. P.	McNiece, Kenneth
Santa Clara County (11)	
Brodovsky, Dan	Barrette, Pierce C.
Cary, J. Alison	Boice, C. L.
Cox, John E.	Burchfiel, Robert
Davis, Burt	Cragin, Robert B.
Dennis, Robert	Dahleen, Henry C.
Foster, Thomas N.	Duisenberg, Charles E.
Fox, Leon P.	Elmore, Ernest F.
Houck, George H.	Felsovanyi, Anthony S.
Liston, Edward	Meyer, Vincent S.
Morton, Paul V.	Olson, Ray N.
Snyder, J. Frederic	Waters, George W.

Delegates	*Alternates*
Santa Cruz County (2)	
Newhall, Luther	Selzer, Ludwig
*Randall, Samuel B.	Spencer, James A.
Shasta County (2)	
Buel, Walter	Nash, Louis
Ryan, Edward D.	Woolf, Norman T.
Siskiyou County (2)	
Bayuk, R. W.	Reynolds, Joseph
Hoyt, Werner	Thompson, Victor
Solano County (2)	
Green, John W.	Jones, F. Burton
O'Connell, Bernard V.	Smith, M. B.
Sonoma County (3)	
Johnson, Cedric C.	Hanzlik, Harold
Norman, Frank W.	Lones, Frank E.
Robbins, R. Dee	Thurlow, A. A. Jr.
Stanislaus County (3)	
Hatch, Francis N.	Radcliff, Robert R.
New, David J.	Reimer, Frank
Spelmann, J. Lyle	Treadwell, Richard R.
Tehama County (2)	
Frey, R. G.	Meuser, A. H.
Thompson, Donald E.	
Tulare County (2)	
Dungan, Vincent M.	Ehrke, Albert A.
Feldmayer, James E.	Jackson, Gordon L.
Ventura County (2)	
Helbling, Franklin K.	Huff, W. Cloyce
Moore, J. W.	Nelson, James H.
Yolo County (2)	
Kimbell, James	Pye, Robert
Robinson, Benjamin R.	
Yuba-Sutter-Colusa County (2)	
Parkinson, Stanley R.	Belz, John F.
Wisner, Francis P.	Billman, Howard

PAST PRESIDENTS (18)

Ewer, Edward N.	1925
Harris, Junius B.	1931
Reinle, George G.	1933
Peers, Robert A.	1935
Wilson, Harry H.	1940
Molony, William R., Sr.	1942
Schaupp, Karl L.	1943
Goin, Lowell S.	1944
McClendon, Sam J.	1946
Cline, John W.	1947
Askey, E. Vincent	1948
Kneeshaw, R. Stanley	1949
Cass, Donald	1950
MacLean, H. Gordon	1951
Alesen, Lewis A.	1952
Green, John W.	1953
Morrison, Arlo A.	1954
Shipman, Sidney J.	1955

*Deceased.

RECEPTION

WOMAN'S AUXILIARY TO THE C.M.A.

SUNDAY, APRIL 28, 6 to 8 P.M.

East and West Venetian Rooms

Honoring Mrs. Donald A. Charnock

All doctors and their wives are cordially invited

House of Delegates Agenda

1957 Annual Session

Embassy Room, Ambassador Hotel

Speaker.....James C. Doyle, Beverly Hills

Vice-Speaker.....J. Norman O'Neill, Los Angeles

Secretary.....Albert C. Daniels, San Francisco

FIRST MEETING

Sunday, April 28, at 9:30 a.m.

ORDER OF BUSINESS

1. Call to order.
2. Report of Committee on Credentials, and Organization of the House of Delegates.
3. Roll call.
4. Announcement and approval of Reference Committees.
   (*a*) Committee on Credentials. (Delegates must register with the Committee.)
   (*b*) Reference Committee on the Reports of Officers, the Council, the Commissions, and Standing and Special Committees. (Reference Committee No. 1.)
   (*c*) Reference Committee on Finance, to review the reports of the Secretary-Treasurer and the Executive Secretary and to study and make recommendations to the House of Delegates on the budget submitted by the Council and the amount of dues for the ensuing year. (Reference Committee No. 2.)
   (*d*) Reference Committee on Resolutions and New and Miscellaneous Business. (Reference Committee No. 3.)
   (*e*) Reference Committee on Amendments to the Constitution and By-Laws. (Reference Committee No. 4.)
   (*f*) Reference Committee on C.P.S. Business.
5. Address by President of the Woman's Auxiliary to the C.M.A.—Mrs. Paul Blaisdell, South Pasadena.
6. Address by President Donald A. Charnock—Presentation of 50-Year Awards.
7. Miscellaneous announcements by the Speaker. (Stenographic service to secure copies of resolutions, etc.)
8. Report of the President—Donald A. Charnock.
9. Report of the President-elect—Frank A. MacDonald.
10. Report of the Speaker of the House of Delegates—James C. Doyle.
11. Report of the Vice-Speaker of the House of Delegates—J. Norman O'Neill.
12. Report of the Trustees of the California Medical Association—Donald A. Charnock, President.
13. Report of Physicians' Benevolence Fund, Inc.—Donald A. Charnock, President.
14. Report of the Secretary—Albert C. Daniels.
15. Report of the Treasurer—Albert C. Daniels.
16. Report of the Editor—Dwight L. Wilbur.
17. Report of the Executive Secretary—John Hunton.
18. Report of Legal Counsel—Peart, Baraty and Hassard.
19. Report of the Executive Committee—Ivan C. Heron, chairman.
20. Report of the Council—Donald D. Lum, chairman.
21. Reports of District Councilors.
22. Reports of Councilors-at-Large.
23. Report of C.P.S. Board of Trustees—T. Eric Reynolds, president.
24. Reports of Commissions.
   (*a*) Cancer Commission—John W. Cline.
   (*b*) Commission on Medical Education—Edward C. Rosenow, Jr.
      (1) Committee on Blood Banks—Andrew M. Henderson, Jr.
      (2) Committee on Industrial Health and Rehabilitation—Jerome Shilling.
      (3) Committee on Medical Education and Hospitals—Harold G. Trimble.
      (4) Committee on Mental Health—Alfred Auerback.
      (5) Committee on Postgraduate Activities—Edward C. Rosenow, Jr.
   (*c*) Commission on Medical Services—Hollis L. Carey.
      (1) Committee on Fees—Francis J. Cox.
      (2) Committee on Government-Financed Medical Care Programs—John M. Rumsey.
      (3) Committee on Indigent Care—C. L. Cooley.
      (4) Committee on Maternal and Child Care—Donald C. Harrington.
      (5) Committee on Medical Economics — Robert Shelton.
      (6) Committee on Problems of the Aged—E. R. Lambertson.

(*d*) Commission on Professional Welfare—Joseph F. Sadusk, Jr.

(1) Committee on Health and Accident Insurance Arthur A. Kirchner.

(2) Committee on Unlawful Practice of Medicine—Arlo A. Morrison.

(3) Medical Review and Advisory Board—Joseph F. Sadusk, Jr.

(*e*) Commission on Public Health and Public Agencies—Francis E. West.

(1) Committee on Military Affairs and Civil Defense—Justin J. Stein.

(2) Committee on Other Professions—Wayne Pollock.

(3) Committee on Rural and Community Health—Robb Smith.

(4) Committee on School Health—Albert C. Daniels.

(5) Committee on State Medical Services—Francis E. West.

(6) Committee on Veterans Affairs—Berthel H. Henning.

(*f*) Commission on Public Policy—Dan O. Kilroy.

(1) Committee on Legislation—Dan O. Kilroy.

(2) Committee on Public Relations—Sidney J. Shipman.

(*g*) Judicial Commission—Donald A. Charnock.

25. Reports of Standing Committees.

(*a*) Auditing Committee—Ivan C. Heron.

(*b*) Committee on Scientific Work—Albert C. Daniels.

(*c*) Medical Executives Conference—John Hunton.

26. Reports of Special Committees.

(*a*) Committee on History and Obituaries—J. Marion Read.

(*b*) Delegates to the A.M.A.—Robertson Ward.

(*c*) Committee on the Private Practice of Medicine by Medical School Faculty Members—Dwight L. Wilbur, M.D., chairman.

27. Old and unfinished business.

28. New business.

SECOND MEETING

Wednesday, May 1, at 9:30 a.m.

Order of Business

1. Call to order.
2. Supplemental report of Credentials Committee.
3. Roll call.
4. Secretary's announcement of Council's selection of place for the 1958 annual session.
5. Election of officers:

(*a*) President-elect.

(*b*) Speaker.

(*c*) Vice-speaker.

(*d*) District Councilors (three-year term):

(1) Third District—H. Clifford Loos, Los Angeles (term expiring).
Third District—Los Angeles.

(2) Sixth District—Donald C. Harrington, Stockton (term expiring).
Sixth District—Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tulare and Tuolumne counties.

(3) Ninth District—Donald D. Lum, Alameda, (term expiring).
Ninth District—Alameda and Contra Costa counties.

(*e*) Councilors-at-Large (three-year terms):

(1) Arthur E. Varden, San Bernardino (term expiring).

(2) Ivan C. Heron, San Francisco (term expiring).

(*f*) Delegates to American Medical Association:

Delegates and Alternates to the American Medical Association are elected for terms of two calendar years. The Delegates and Alternates to be elected at this meeting will serve for two calendar years starting January 1, 1958.

Incumbents:

(1) Robertson Ward, San Francisco (term expiring).

(2) Sam J. McClendon, San Diego (term expiring).

(3) Eugene F. Hoffman, Los Angeles (term expiring.)

(4) John W. Green, Vallejo (term expiring).

(5) L. A. Alesen, Los Angeles (term expiring).

(6) Frank A. MacDonald, Sacramento (term expiring).

(7) Paul D. Foster, Los Angeles (term expiring).

(*g*) Additional Delegate to American Medical Association (new office). Term expires December 31, 1958.

(*h*) Alternates to the American Medical Association:

Incumbents:

(1) Henry Gibbons, III, San Francisco (alternate to Robertson Ward).

(2) A. E. Moore, San Diego (alternate to Sam J. McClendon).

(3) Frederic S. Ewens, Manhattan Beach (alternate to Eugene F. Hoffman).

(4) Warren L. Bostick, San Rafael (alternate to John W. Green).

(5) J. B. Price, Santa Ana (alternate to L. A. Alesen).

(6) J. E. Vaughan, Bakersfield (alternate to Frank A. MacDonald).

(7) Arthur A. Kirchner, Los Angeles (alternate to Paul D. Foster).

(*i*) Additional Alternate to American Medical Association (new office). Term ends December 31, 1958.

6. Election of C.P.S. Trustee (three-year terms):

Report of C.M.A. Council as Nominating Committee.

Incumbents:

(*a*) Philip N. Baxter, Oakland (not eligible for reelection).

(*b*) C. Glenn Curtis, Brea (not eligible for reelection).

(*c*) Thomas N. Foster, San Jose (not eligible for reelection).

(*d*) J. Norman O'Neill, Los Angeles (not eligible for reelection).

(*e*) John F. Wanless, San Diego.

(*f*) Mr. Ransom M. Cook, San Francisco.

7. Announcement by Secretary.
   Council's nominations of members of Commissions and Committees (for approval by the House of Delegates).
8. Reports of Reference Committees:
   (*a*) Report of Reference Committee No. 1 on Reports of Officers, the Council, Commissions, and Standing and Special Committees.
   (*b*) Report of Reference Committee No. 2 on Reports of the Secretary-Treasurer, the Executive Secretary, and the budget and dues.
   (*c*) Report of Reference Committee No. 3 on Resolutions and New and Miscellaneous Business.
   (*d*) Report of Reference Committee No. 4 on Amendments to the Constitution and By-Laws.
   (*e*) Report of Reference Committee on C.P.S. Business.
9. Unfinished business.
10. New business.
11. Presentation of officers:
    President
    President-elect
    Speaker
    Vice-speaker
12. Presentation of certificate to retiring president—Donald A. Charnock.
13. Approval of minutes. (Committee to edit.)
14. Adjournment.

JAMES C. DOYLE, *Speaker*
ALBERT C. DANIELS, *Secretary*

RESTAURANTS

Sunday, April 28:

Breakfast . . . . . Cocoanut Grove, Coffee Shop, and Casino Room
Lunch . . . Cocoanut Grove, Dolphin Court, Coffee Shop, and Casino Room

Monday, April 29:

Breakfast . . . . . Cocoanut Grove, Coffee Shop, and Casino Room
Lunch . . . . . Cocoanut Grove, Coffee Shop, and Casino Room

Tuesday, April 30:

Breakfast . . . . . Cocoanut Grove, Coffee Shop, and Casino Room
Lunch . . . . French Room, Dolphin Court, Coffee Shop, and Casino Room
Dinner . . . . . Cocoanut Grove—President's Dinner Dance

Wednesday, May 1:

Breakfast . . . . . Cocoanut Grove, Coffee Shop, and Casino Room
Lunch . . . . . Cocoanut Grove, Coffee Shop, and Casino Room

PRE-CONVENTION REPORTS

Officers • Councilors • Committees

REPORTS OF GENERAL OFFICERS

REPORT OF THE PRESIDENT

To the House of Delegates:

The affairs of the California Medical Association grow with each year. These have been ably handled by the commissions and committees responsible for the many details of business. The Council and the Executive Committee have carried their full share of responsibilities. These activities will be reported to the House of Delegates by these groups. Many of these reports will be of primary importance; all will be an index of the hard work and devotion of the many physicians who make up the working force of this great organization.

The start of our second century has brought new problems and fresh responsibilities. How well these are met will influence the practice of medicine for the future. To remain static has never been the tradition of the California Medical Association.

To all my colleagues who have served on the Council, in the House of Delegates, on the numerous committees and in the county societies, my sincere thanks for your devoted support. The members of our full-time staff likewise deserve the appreciation of us all.

Respectfully submitted,

DONALD A. CHARNOCK, *President*

REPORT OF THE PRESIDENT-ELECT

To the President and the House of Delegates:

During the past year it has been a pleasure and privilege to visit practically all of the county medical societies north of the Tehachapis. In place of routine speeches by all members of the visiting group we have arranged this year for one talk on medico-economic problems followed by an open forum in which subjects of particular interest to each medical society are discussed. The audience participation portion of these programs has proved to be particularly interesting and instructive and has aroused discussion on controversial issues which has seemed helpful in solving many local society problems. In addition, many areas of misunderstanding have been cleared up by supplying background material with which many medical men are unfamiliar.

We think that this change in the type of program presented will tend to encourage medical men in future to bring their problems to the elected officers of the C.M.A. and will afford an opportunity for the interchange of opinions, criticisms and suggestions for the improvement of public health and the betterment of organized medicine.

Respectfully submitted,

FRANK A. MACDONALD, *President-elect*

REPORTS OF SPEAKER AND VICE-SPEAKER OF THE HOUSE OF DELEGATES

To the President and the House of Delegates:

Your Speaker and Vice-Speaker have attended all Council and numerous other meetings throughout the year. We are both deeply grateful and appreciative of the honor bestowed on us by the House of Delegates. We shall to the best of our abilities perform our duties honestly, wisely and in a spirit of humbleness.

Respectfully submitted,

JAMES C. DOYLE, *Speaker*

J. NORMAN O'NEILL, *Vice-Speaker*

REPORT OF THE PRESIDENT OF THE TRUSTEES OF THE C.M.A.

To the House of Delegates:

The Trustees of the California Medical Association is organized as a nonprofit corporation with the function of holding surplus assets of the Association. Its operations are minimal when transfers of funds between the C.M.A. and the corporation are not required, which has been the case in 1956. In such times the corporation serves only as a repository.

Accounts of the corporation are audited annually by John F. Forbes & Co., certified public accountants, and the reports for the fiscal year ended June 30, 1956, appear in this issue under the report of the Treasurer. All members are urged to review these reports for information on the true reserve fund status of the California Medical Association.

Respectfully submitted,

DONALD A. CHARNOCK, *President*

REPORT OF PHYSICIANS' BENEVOLENCE FUND, Inc.

To the House of Delegates:

Physicians' Benevolence Fund, Inc., is a California nonprofit corporation organized in 1955 under terms of the C.M.A. Constitution and By-Laws. Its purpose is to collect and disburse funds for the assistance of needy physicians and/or their dependents. The corporation was formed to take over the functions of the former Benevolence Fund of the C.M.A., which was established about 16 years ago to meet this worthy purpose.

While the corporation was formed in 1955 under terms of a resolution introduced in the House of Delegates, it came into actual being only in 1956, when the House approved the constitutional amendment offered a year earlier.

Under the By-Laws of the corporation, the members of the Executive Committee of the C.M.A. act as the board of directors. However, for operating purposes, the members of the former Benevolence Committee have been renamed as members of the Operating Committee and have functioned in that office throughout the year. The actual transfer of funds and other assets was accomplished in the fall of 1956. The Operating Committee consists of Doctors Axcel E. Anderson of Fresno, chairman, and Doctors Elizabeth Mason-Hohl and Ford P. Cady of Los Angeles, all of whom are to be commended on their prompt and sound judgment in considering needy cases.

In 1956, as in 1955, the principal beneficiary of the Benevolence Fund was the Los Angeles County Physicians' Aid

Association, which maintains a home for the needy and handles a large number of cases, many of which come to Los Angeles from other areas. In addition, the fund has handled benevolences for several additional physicians and for one widow left in need by the untimely death of her husband. Some of these cases have been of a temporary nature while others may command the committee's attention for longer periods. It is fortunate that there are as few cases of need as have come to the committee's attention. All cases are promptly investigated and the decisions of the committee promptly translated into cash disbursements under proper auspices.

Financially, the fund started 1956 with $77,840.63 in assets, all represented by cash or Government securities. Income for the year totaled $19,746.65, of which $14,058.75 came from the contribution of the C.M.A. from members' dues, $1,609.40 from interest on securities, $4,068.50 from the Woman's Auxiliary and $10 contributed in the memory of two deceased physicians.

Disbursements totaled $8,910, including $6,000 contributed to the Los Angeles County Physicians' Aid Association and $2,910 in benevolences to individuals. The resulting balance at the end of 1956 was $88,677.28, represented by cash, securities and amounts due from the C.M.A.

It is a pleasure to report on the good work performed by this fund and to thank the Woman's Auxiliary and other contributors for their generosity. It is also a pleasure to commend the members of the Operating Committee for their fine work at all times.

Respectfully submitted,

DONALD A. CHARNOCK, *President*

REPORT OF THE SECRETARY

To the President and the House of Delegates:

As Secretary, appointed by the Council, I have attended the meetings of the Council and the Executive Committee throughout the year, have reviewed the minutes prepared for these meetings and have attended to the duties assigned by the Council and the Executive Committee.

In addition, the Secretary is asked to handle the statewide and regional conferences of physicians and schools and serve as the chairman of the Committee on Scientific Work. These activities will be reported under their own headings.

I would again urge that all members of the Association review the official minutes published for Council and Executive Committee meetings in CALIFORNIA MEDICINE, and correspond with officers of the Association if they have any questions on any items reported from such minutes.

Respectfully submitted,

ALBERT C. DANIELS, *Secretary*

REPORT OF THE EDITOR

To the President and the House of Delegates:

In order to shorten the time between the acceptance and the publication of manuscripts, CALIFORNIA MEDICINE last year reduced its inventory of material on hand to the lowest level consistent with prudence. This was done by accepting slightly fewer manuscripts while at the same time increasing the number published to a record high—169 for 12 months.

The flow of material submitted for consideration continued at about the same level as in preceding years, as follows:

	From Annual Session		From Other Sources		Total	
	Rec'd	Accepted	Rec'd	Accepted	Rec'd	Accepted
1956....	110	71	123	82	243	153
1955....	124	81	118	75	242	156
1954....	123	83	120	72	243	155

A new department was added to your journal last year—a special section for publication of material supplied by the Medical Review and Advisory Board.

At the time of this report there are two vacancies on the Editorial Board, neither of them easily filled, for one was created by the death of Dr. Lewis Francis Morrison who reviewed material on Ear, Nose, and Throat, and the other by the retirement of Dr. Donald G. Tollefson of the section on Obstetrics and Gynecology. These men served with great distinction and gave invaluable aid to the editor and his staff. Successors will be appointed at the meeting of the Council in March.

The Editorial Board continued to function well during the year, reviewing manuscripts and other material with due dispatch, which is sometimes particularly difficult because a large part of its work—appraising manuscripts read at the California Medical Association annual meeting—is crowded into the two months following the meeting. The editor welcomes this opportunity to thank not only the members of the board but many others who have been called upon from time to time for advice and assistance with regard to special material. The members of the Editorial Board and others who have reviewed books have rendered invaluable service to the readers of CALIFORNIA MEDICINE. The Advertising Committee again has kept high the standards of advertising material appearing in the journal. The assistant to the editor, Robert F. Edwards, and the secretary to the Editorial Board, Mrs. Barbara Rooney, have again greatly aided the editor, lightened the load of all members of the board and contributed indispensably to the publication of CALIFORNIA MEDICINE.

Respectfully submitted,

DWIGHT L. WILBUR, *Editor*

REPORT OF THE TREASURER

To the President and the House of Delegates:

The Treasurer of the California Medical Association holds office as the Secretary-Treasurer but, in fact, does not perform any of the functions of a treasurer. These have been delegated by the Council to staff members in the C.M.A. office who, in turn, work under the direction of the Auditing Committee.

Consequently, the report of the Treasurer consists only of copies of the reports rendered by John F. Forbes & Co., certified public accountants, following their annual audit of the books as of the June 30, 1956, fiscal year-end.

The reports given here consist of the balance sheet and income-expenditure accounts of both the California Medical Association and the Trustees of the California Medical Association, a nonprofit corporation which serves as a holding company for assets accumulated by the Association. The two sets of reports, taken together, give a complete picture of the Association's financial position.

Respectfully submitted,

ALBERT C. DANIELS, *Treasurer*

TRUSTEES OF THE CALIFORNIA MEDICAL ASSOCIATION

(A California Corporation)

EXHIBIT A

BALANCE SHEET, JUNE 30, 1956

ASSETS

CASH	$ 43,408.08
GENERAL AND BENEVOLENCE FUND INVESTMENTS	1,210,000.00
TRUST FUND FOR CALIFORNIA MEDICAL ASSOCIATION EMPLOYEES	49,057.24
PREPAID INSURANCE	131.83
TOTAL	$1,302,597.15

LIABILITIES

TRUST ACCOUNTS:			
Benevolence Fund		$ 87,491.06	
Morris Herzstein Bequest Fund		8,478.12	
Total trust accounts			$ 95,969.18
ENDOWMENT FUND			276.74
OTHER TRUST FUNDS			73,057.24
SURPLUS:			
Contributed surplus		$882,915.99	
Earned surplus, June 30, 1955	$238,136.24		
Add:			
Net income for the year, Exhibit B	10,567.57		
Reduction of Trust Fund	1,674.19	250,378.00	
Total surplus			1,133,293.99
TOTAL			$1,302,597.15

EXHIBIT B

STATEMENT OF INCOME FOR THE YEAR ENDED JUNE 30, 1956

INCOME:		
Interest on bonds		$28,025.00
Other		.72
Total		$28,025.72
EXPENDITURES:		
Audit fee	$ 340.42	
Custodian fee	352.50	
Miscellaneous	147.63	
Total		840.55
BALANCE		$27,185.17
ADD—THE EXCESS OF MATURITY VALUE OVER COST OF U. S. TREASURY BILLS PURCHASED DURING THE YEAR, CHARGED TO THE INVESTMENT ACCOUNT TO REFLECT MATURITY VALUE OF THE TREASURY BILLS		559.90
Total		$27,745.07
OTHER CHARGES:		
Net premium on life and retirement insurance policies	$ 14,177.50	
Provision for the retirement or other benefit of an employee of an affiliated organization	3,000.00	17,177.50
REMAINDER—NET INCOME FOR THE YEAR		$10,567.57

CALIFORNIA MEDICAL ASSOCIATION

EXHIBIT A

BALANCE SHEET, JUNE 30, 1956

ASSETS

CASH		$157,249.19
ACCOUNTS RECEIVABLE		17,149.74
LOAN RECEIVABLE—NEW MEXICO PHYSICIANS' SERVICE	$ 2,500.00	
Less reserve	2,500.00	
Remainder		Nil
OTHER LOANS RECEIVABLE	$202,447.00	
Less reserve	201,726.00	
Remainder		721.00
INVESTMENT IN U. S. TREASURY BILLS (at cost)		198,746.22
TRUST FUND (contra)		4,641.22
FURNITURE AND FIXTURES (at nominal value)		1.00
DEFERRED CHARGES		2,201.56
DEPOSITS		1,675.00
TOTAL		$382,384.93

LIABILITIES

ACCOUNTS PAYABLE		$ 8,594.20
ACCRUED EXPENSES:		
General:		
American Medical Association—Delegates and other expenses	$ 3,669.59	
Organization expenses	4,139.14	
Committees' and sundry	13,753.09	
Payroll taxes	873.47	
Total	$ 22,435.29	
American Medical Education Foundation	132,981.00	
Total		155,416.29
TRUST ACCOUNT—PHYSICIANS' BENEVOLENCE FUND, INC. (contra)		4,641.22
DEFERRED INCOME—PREPAID ADVERTISING		249.52
SURPLUS, EXHIBIT B		213,483.70
TOTAL		$382,384.93

EXHIBIT B

STATEMENT OF INCOME AND SURPLUS FOR THE YEARS ENDED JUNE 30, 1956, AND 1955, AND COMPARISON

INCOME:	Year Ended June 30 1956	Year Ended June 30 1955	Increase *Decrease*
DUES AND GENERAL:			
Membership dues, less portion allocated to CALIFORNIA MEDICINE subscription	$634,569.88	$473,963.87	$160,606.01
Exhibitors at annual meeting	24,986.25	27,040.00	*2,053.75*
Postgraduate institute	10,488.00	9,720.00	768.00
Fee for collection of American Medical Association dues	3,468.63	3,238.62	230.01
Interest earned	2,380.99	1,450.00	930.99
Other	85.73	56.40	29.33
TOTAL	$675,979.48	$515,468.89	$160,510.59
OFFICIAL JOURNAL—CALIFORNIA MEDICINE:			
Advertising	$159,350.57	$141,551.75	$ 17,798.82
Members' subscriptions allocated from dues	44,788.50	41,870.05	2,918.45
Other subscriptions	1,986.42	2,399.88	*413.46*
Reprints (net)	723.77	339.85	383.92
TOTAL	$206,849.26	$186,161.53	$ 20,687.73
TOTAL INCOME	$882,828.74	$701,630.42	$181,198.32
EXPENDITURES (Schedule 1):			
ADMINISTRATION	$245,711.91	$241,234.77	$ 4,477.14
SCIENTIFIC, EDUCATIONAL, AND PUBLIC RELATIONS	442,149.13	387,838.60	54,310.53
TOTAL	$687,861.04	$629,073.37	$ 58,787.67
OFFICIAL JOURNAL—CALIFORNIA MEDICINE	181,990.71	162,416.60	19,574.11
TOTAL EXPENDITURES	$869,851.75	$791,489.97	$ 78,361.78
REMAINDER	$ 12,976.99	*$ 89,859.55*	$102,836.54
SURPLUS CREDIT—REDUCTION IN RESERVE FOR BLOOD BANK LOANS OUTSTANDING AT JUNE 30, 1955	14,242.50		
TOTAL	$ 27,219.49		
SURPLUS CHARGES:			
Expenses applicable to the prior period (net)	$ 1,057.50		
Reserves provided for loans during the year ended June 30, 1956	94,500.00		
TOTAL	$ 95,557.50		
DECREASE IN SURPLUS FOR THE YEAR	$ 68,338.01		
SURPLUS, JULY 1, 1955	281,821.71		
SURPLUS, JUNE 30, 1956	$213,483.70		

CALIFORNIA MEDICAL ASSOCIATION

EXHIBIT B—SCHEDULE 1

STATEMENT OF EXPENDITURES FOR THE YEARS ENDED JUNE 30, 1956 AND 1955, AND COMPARISON

	Year Ended June 30		Increase
	1956	1955	*Decrease*
ADMINISTRATION:			
Salaries:			
Administrative	$ 34,725.06	$ 34,288.36	$ 436.70
Clerical	25,209.96	20,285.63	4,924.33
Total	$ 59,935.02	$ 54,573.99	$ 5,361.03
Traveling:			
Officers	$ 2,402.36	$ 1,674.94	$ 727.42
Council and Executive Committee	10,647.25	10,517.43	129.82
Total	$ 13,049.61	$ 12,192.37	$ 857.24
Annual meeting expenses, including transportation	$ 33,255.91	$ 30,795.45	$ 2,460.46
American Medical Association Convention—Delegates' traveling and sundry meeting expenses	$ 23,310.30	$ 26,132.82	*$ 2,822.52*
Council and Executive Committee expenses	$ 2,757.17	$ 2,617.73	$ 139.44
Conference of Physicians and Schools	$ 9,606.58		$ 9,606.58
County Secretaries' Conference	$ 3,478.39	$ 4,049.07	*$ 570.68*
Los Angeles office expenses	$ 5,214.94	$ 4,875.37	$ 339.57
Legal and organization expense:			
Legal expense	$ 14,964.54	$ 14,106.20	$ 858.34
Organization expense	38,643.95	61,035.80	*22,391.85*
Total	$ 53,608.49	$ 75,142.00	*$ 21,533.51*
Office expenses:			
Office rent	$ 9,885.01	$ 8,712.96	$ 1,172.05
Telephone and telegraph	3,718.66	2,826.02	892.64
Supplies and expense	12,531.17	7,184.59	5,346.58
Postage	959.98	1,303.74	*343.76*
Total	$ 27,094.82	$ 20,027.31	$ 7,067.51
Other expenses:			
Equipment purchases and expense	$ 3,693.92	$ 2,411.89	$ 1,282.03
Payroll taxes	2,738.89	2,357.91	380.98
Pensions	480.00	480.00	
Contribution—The Woman's Auxiliary of the California Medical Association	1,750.00	1,750.00	
Student subscriptions and meeting expenses	5,419.33	3,426.66	1,992.67
Miscellaneous	318.54	402.20	*83.66*
Total	$ 14,400.68	$ 10,828.66	$ 3,572.02
TOTAL	$245,711.91	$241,234.77	$ 4,477.14
SCIENTIFIC, EDUCATION, AND PUBLIC RELATIONS:			
Department of Public Relations	$ 76,447.91	$ 67,854.04	$ 8,593.87
Public policy and legislation	48,385.22	72,609.99	*24,224.77*
Physicians' Benevolence	14,608.50	12,367.75	2,240.75
Postgraduate activities	44,415.05	35,265.07	9,149.98
Cancer Commission	32,649.04	27,587.02	5,062.02
Other committee activities	57,358.15	62,970.87	*5,612.72*
Subscriptions to libraries	7,304.26	6,183.86	1,120.40
Contribution to California League for Nursing	3,000.00	3,000.00	
Contribution to the American Medical Education Foundation	157,981.00	100,000.00	57,981.00
TOTAL	$442,149.13	$387,838.60	$ 54,310.53
OFFICIAL JOURNAL—CALIFORNIA MEDICINE:			
Printing	$124,806.94	$109,560.85	$ 15,246.09
Advertising sales expense	15,973.31	13,368.40	2,604.91
Salaries	22,296.08	21,741.75	554.33
Rent	3,306.65	3,043.20	263.45
Telephone and telegraph	1,622.72	1,752.49	*129.77*
Postage and mailing	6,084.38	5,630.58	453.80
Addressograph	2,315.13	2,214.97	100.16
Illustrations	2,261.13	1,929.27	331.86
Advertising discounts and collection expense	2,732.60	2,599.32	133.28
Sundry	591.77	575.77	16.00
TOTAL	$181,990.71	$162,416.60	$ 19,574.11
TOTAL	$869,851.75	$791,489.97	$ 78,361.78

REPORT OF THE EXECUTIVE SECRETARY

To the President and the House of Delegates:

The annual report of the Executive Secretary is again divided into sections which cover the activities of the past year and give a review of the present status of operations and properties of the Association. The Executive Secretary will be available for the further detailing of any items for the members of the appropriate reference committee of the House of Delegates.

1. *Administrative.* The headquarters office at 450 Sutter Street, San Francisco, remains the same size as a year ago, although efforts are being made to secure adjacent space for enlargement. Doctor Walter Batchelder, medical director of the Cancer Commission, and his secretary are prepared to move into the headquarters office as soon as space is available; pending such availability, they are being housed in temporary quarters on another floor of the same building.

The office staff in San Francisco consists of five men and twelve women employees, the latter representing an increase of one employee since last year. In the Los Angeles office, at 417 South Hill Street, Mr. Ed Clancy, director of public relations, and Mrs. Margaret Griffith, director of postgraduate activities, make their office with one secretary. The Association's staff is minimal as compared with many other organizations of lesser membership and fewer activities but the staff to date has been able to handle all assignments with a minimum of outside assistance. It should be borne in mind, however, that as the C.M.A. grows in size and in the scope of its activities, additional personnel will undoubtedly be required. Such additional staff can generally be forecast in the preparation of the annual budget and the needed personnel provided for at the start of the new fiscal year.

Mechanically, the office is in good condition and all equipment is modern and in good repair. The usual policy of making replacements of such items as typewriters has been followed during the past year and all such equipment is properly serviced and maintained. On larger items, such as the Mimeograph and Addressograph machines, the useful life of the equipment is considerably longer and replacements are not needed at such frequent intervals. Adequate maintenance is also provided for this type of equipment.

During the past year a new accounting and bookkeeping system was installed by the certified public accountants who do the annual audit. The new setup makes possible a much more detailed breakdown of expenses, such as meetings, travel, salaries, rents, etc., which some committee chairmen have been anxious to review. It is now possible to compile any sort of details requested by officers or committee members with a minimum of delay.

The books have again been audited by John F. Forbes & Co., certified public accountants, and their findings are published in this issue of the journal under the report of the Treasurer.

2. *Membership.* During 1956 the Association's membership continued to rise to a new record high. As of November 1, 1956, the date used for calculating the representation of the county societies in the House of Delegates, total active membership was 14,425, a gain of 785 members, or 6 per cent, over the preceding year. This membership will entitle the Association to one more Delegate in the A.M.A. House of Delegates in 1957.

During 1956, a total of 1,222 new members were admitted. Death took 111 members during the year and another 45 retired from active practice. A membership loss of 161 was recorded by members who resigned to move to other locations, and another 124 members did not pay their dues for 1956. This last figure represents less than 1 per cent of the active membership and is in line with such losses for earlier years.

In accordance with provisions of the By-Laws, the record of membership in the component county societies is published as a part of this report. These figures, as of November 1, 1956, are the basis for allocating Delegates to the county societies, on the basis of one Delegate for each 50 active members or major fraction thereof; each county society is entitled to a minimum of two Delegates.

MEMBERSHIP (ACTIVE) IN THE C.M.A. AS OF NOVEMBER 1, 1956—BY COUNTY SOCIETIES

Alameda-Contra Costa	1,288
Butte-Glenn	81
Fresno	267
Humboldt	76
Imperial	53
Inyo-Mono	12
Kern	180
Kings	28
Lassen-Plumas-Modoc	22
Los Angeles	6,121
Madera	15
Marin	155
Mendocino-Lake	52
Merced	55
Monterey	160
Napa	76
Orange	372
Placer-Nevada-Sierra	60
Riverside	186
Sacramento	357
San Benito	10
San Bernardino	278
San Diego	716
San Francisco	1,574
San Joaquin	189
San Luis Obispo	70
San Mateo	429
Santa Barbara	188
Santa Clara	552
Santa Cruz	82
Shasta	44
Siskiyou	18
Solano	70
Sonoma	139
Stanislaus	142
Tehama	14
Tulare	99
Ventura	102
Yolo	41
Yuba	52
TOTAL	14,425

3. *Financial.* Financially, the latest audited report available is for the fiscal year ended June 30, 1956. This report is printed under the report of the Treasurer in the full detail provided by the accountants. In this report, a few highlights will be mentioned.

The Association ended the 1955-1956 fiscal year with a balance of $12,977 over expenses, compared with a deficit of $89,860 for the preceding fiscal period. This difference is almost entirely accounted for by the $100,000 contribution made by the Association to the American Medical Education Foundation in the 1954-1955 year, an item which had not been originally budgeted.

On the income side, dues collected during the year totaled $634,570, a gain of 33.9 per cent over dues of $473,964 for the preceding year. The increased figure includes the 1956 dues of $50 a member, compared with $40 in 1955. Discounting the additional $10 in dues, income from this item showed an increase of 13.9 per cent from the previous year. Income from annual session exhibits was off slightly and income from postgraduate institutes and interest and miscellaneous sources was slightly higher.

As to expenditures, administrative costs came to $245,712

for the year, an increase of $4,477 or 1.9 per cent, over the preceding period. Expenditures for items classified by the auditors as scientific—educational—public relations, totaled $442,149, up 14 per cent from the $387,839 recorded the preceding year. Included in administrative expenses was an item of $9,607, a new budget item representing the cost of staging conferences of physicians and schools. The item of organization expense, covering mainly research work, decreased from $61,036 to $38,644 for the year. Most other administrative items remained at about the same levels as in the preceding fiscal year.

Under the scientific—educational—public relations category, increased expenditures were noted in postgraduate activities, Cancer Commission, public relations and contributions to libraries; decreases were reported for legislative activities and for the general list of other committees.

For CALIFORNIA MEDICINE, total income amounted to $206,849, an increase of 11.1 per cent from the $186,161 reported for the preceding fiscal year. Advertising revenues gained 12.6 per cent, from $141,552 to $159,351, and other income went up 4.2 per cent, from $44,609 to $47,498. Expenses of publication increased from $162,417 to $181,991, a jump of 12 per cent. This gain is almost entirely accounted for by increased circulation to serve the augmented membership and by higher printing costs occasioned by increased wage rates required from the printer by union contracts. On the basis of income records, which include a mandatory $3 from the dues of each active member to meet postal requirements, the Journal returned a net surplus of $24,959 for the 1955-1956 fiscal year, compared with a net surplus of $23,744 for the preceding year.

At the close of calendar 1956, the Association held notes for more than $215,000, representing funds advanced to four blood banks, to New Mexico Physicians' Service, to Audio-Digest Foundation and to several members who suffered from the disastrous floods a year ago. The loan to New Mexico Physicians' Service, covering funds advanced month by month from 1946 to 1948, has now been paid in full, and the blood bank loans are being repaid on a monthly basis. Loans to flood victims are already being repaid and will be subject to further repayments on a calendar quarterly basis from now until the end of 1960. It is believed that all these loans will be self-liquidating over a period of years.

4. *California Medicine.* The financial results of the Journal are shown in the section above. Editorially, CALIFORNIA MEDICINE continues to occupy a high spot among state medical journals and to bring an excellent type of material to the members of the Association. Your Executive Secretary serves as business manager of the journal, attends some of the meetings of the Advertising Committee and at all times confers with the employees who are directly concerned with the publication. It has also been the privilege of the executive secretary to prepare some of the editorials which have been published.

5. *Commissions and Committees.* Much of the detail work for the various commissions and committees flows through the central office of the Association. The function of the staff is to work with the commission and committee chairmen, to facilitate their work and to do whatever is properly delegated to lay employees. This may involve the preparation of reports, editing, assisting at meetings, arranging for conferences or meetings, channeling material into the proper hands and other functions. This work entails, of course, the participation of all office employees. Without attempting to single out specific individuals, it is worthy of note that Mr. Robert Thomas has continued his services as executive secretary to the Commission on Medical Services and has aided in the work of the Conferences on Physicians and Schools. Similarly, Mr. Glenn Gillette has worked closely with the Committee on Rural and Community Health and has been instrumental in working out the programs for this body. All committee and commission chairmen are invited to use the services of the C.M.A. office to the best possible advantage and a large volume of work ensues from this source. The office policy has consistently been that the office exists for the benefit of the members who hold official posts and whose personal time should not be subjected to infringements.

6. *Public Relations.* Your executive secretary keeps in constant touch with Messrs. Ed Clancy and Glenn Gillette of the public relations staff and reviews the work of this department. It is noteworthy that the public relations activities of the C.M.A. continue to draw the praise of national authorities in this field. Many of the programs carried on in California are emulated in other areas and the C.M.A. gives full cooperation in such cases on the theory that good public relations for the medical profession in one area may well be shared with other sections of the state or the country. In this connection it is noteworthy that the program developed by a statewide organization must be of a nature to apply to all sections of the state. From time to time a county medical society may develop an idea which is particularly adaptable to its own area but which may not fit into a statewide pattern. The C.M.A. policy in such cases has consistently been that local ideas are local responsibilities and that the funds available for a statewide program should be devoted to programs which are considered to be of statewide usefulness and are offered to the county societies for their use if desired.

7. *Annual Session.* Arrangements are now under way for the 1957 Annual Session, which will again be held at the Ambassador Hotel in Los Angeles. This site offers the best available quarters to handle the entire C.M.A. session, including activities of the Woman's Auxiliary and other associated groups. The C.M.A. Council last year voted to hold two successive annual sessions in the Los Angeles area and the third in San Francisco. This timetable has been somewhat upset by the scheduling of the A.M.A. 1958 meeting in San Francisco, which would adversely affect a C.M.A. meeting there a month earlier. Accordingly, arrangements have been made to hold the 1958 meeting in Los Angeles and the 1959 session in San Francisco. It is believed that the 1957 meeting is scheduled to meet the desires of the bulk of the membership who attend these meetings.

8. *Medicare.* On December 7, 1956, the "Medicare" program for the medical, surgical and hospital care of dependents of military personnel went into effect. It is worth noting that California was one of the key states in the discussions of this program with the military authorities in Washington and that the Relative Value studies of the C.M.A. completed earlier in the year by a committee headed by Doctor Francis J. Cox, were used as the basis for establishing schedules of allowable fees under this program. In California the plan will come under the fiscal administration of California Physicians' Service, which has for more than ten years handled the administration of the program for "home-town" care of veterans with service-connected disabilities. The Commission on Medical Services and its Committee on Fees deserve commendation for the excellent pattern they have established for the entire country in this new plan.

9. *Conclusion.* The writer wishes to extend his personal thanks to the officers, councilors, committee and commission members and others who have contributed so generously to the work of the Association. It has long been an accepted fact in medical organizations that a small percentage of the entire membership represents the "work horses" who get things done. This is certainly true in the C.M.A. and the members who add their personal time and talents to the workings of the Association are due the thanks of all their colleagues.

Many thanks are also due the entire staff of the Association for their continued devotion to the affairs of the C.M.A. and their constant willingness to get a job done regardless of personal inconvenience. Without such a staff the Association would not be able to carry on its many-faceted operations so effectively.

Respectfully submitted,

JOHN HUNTON, *Executive Secretary*

REPORT OF LEGAL DEPARTMENT

To the President and the House of Delegates:

The Legal Department submits the following report covering the interval between the 1956 annual session and the time of the submission of this report in January, 1957.

During the past year we have attended all meetings of the House of Delegates, the Council, and the Executive Committee, as well as meetings of various commissions, standing committees, and special committees of the Association; and have also prepared and submitted opinions on a variety of subjects, as requested by the Association or its officers or its component societies.

1. *Medical Ethics:*

In the past year there has been a very important court decision on the question of the right of the county medical society to enforce the principles of medical ethics by expulsion. The case is *Bernstein vs. Alameda-Contra Costa Medical Association*, 139 Cal. App. (2d) 241.

In this case the county society's council had found, after hearing, that Dr. Bernstein had been guilty of five separate violations of medical ethics. On appeal to the Council of the C.M.A. he was found not guilty as to one of the violations but guilty as to the other four. After his expulsion had been upheld by the Judicial Council of the A.M.A., Dr. Bernstein commenced suit, claiming that the court should restore him to membership.

The trial court found that the county society's findings as to three of the violations were supported by substantial evidence, and it held that the doctor was not entitled to any legal relief. Dr. Bernstein appealed to the District Court of Appeal, which held as follows:

(a) One of the charges against Dr. Bernstein involved a written report made by him to the Industrial Accident Commission in which he criticized another physician. As to this charge the court held that medical reports to the Industrial Accident Commission are the equivalent of testimony in a judicial proceeding and that therefore such reports are privileged and may not be the basis for any punitive action;

(b) That the other two violations were supported by substantial evidence, and therefore were not ground for legal intervention;

(c) That in a case involving expulsion of a member from a county medical society, the only function which the courts may perform is to determine whether the county medical society acted within its powers, in good faith, and in accordance with its laws and the law of the land; and

(d) In view of the fact that Dr. Bernstein's original expulsion was based on five violations, whereas after the various appeals only two violations remained in effect, the court could not tell what the decision of the council of the county society would have been if it had found two violations in lieu of five, and therefore the case was returned to the county society for the sole purpose of determining the penalty to be imposed in the light of the fact that the two violations exist.

The case is of long-range significance in that the District Court of Appeal rejected Dr. Bernstein's contention that medical ethics must be narrowly construed. Instead, the court upheld the position of the county medical society that principles of medical ethics are guiding principles to be applied in an equitable and just manner but not with the precise technicalities that are applicable in criminal proceedings.

The case is also of importance in that it establishes for the first time the privilege of confidence and safety against retaliation for reports and testimony given in proceedings before the Industrial Accident Commission.

2. *Professional Liability:*

In the field of professional tort liability, we have attended all meetings of the Medical Review and Advisory Board, have submitted a number of opinions to it, have appeared before a number of county medical societies, and have consulted with a great number of interested related groups.

The trend of court decisions in this field is most alarming and poses a problem of major importance to the medical profession. The degree to which the courts have extended personal liability to physicians for professional acts may best be illustrated by a short quotation from a recent case. The court said: ". . . injections in the muscle of the arm, as well as in other portions of the body, do not cause trouble unless unskillfully done or there is something wrong with the serum."

We need not point out the medical flaws in the judge's statement. However, it dramatically illustrates the present attitude of the courts toward medical responsibility for unexpected or bad results. Judges have stated time and again, in substance, that it is their personal belief that physicians will not testify against each other, even in a meritorious case. Without saying so directly, it is apparent from court decisions that judges have undertaken to remedy the situation which they believe exists by modifying the rules of law in favor of patients who sue and against physicians. Although physicians *do* testify on behalf of plaintiffs in malpractice cases, the widespread belief to the contrary is deeply imbedded in the public mind.

During the past year preliminary discussions have taken place between a special committee of the State Bar and the C.M.A.'s Medical Review and Advisory Board in an effort to find a fair answer to this problem, to the end that physicians will not be penalized by the law, at the same time preserving the legal rights of a patient who has been injured through the wrongful act or omission of a physician. It is of the utmost importance to the medical profession that some workable and equitable solution evolve from these discussions, and it is hoped that they will continue in the coming year and will attain the objective sought.

3. *Cultists:*

A group of chiropractors who have adopted the term "naturopath" continue to press for legislation licensing "Doctors of Naturopathy." During the year we have attended public hearings before legislative committees investigating this subject, and have endeavored to present the known facts with respect to naturopathy.

It should be reported that in 1956 two states that previously licensed naturopaths repealed the licensing statutes; these states being South Carolina and Georgia.

California possesses, in our opinion, inadequate laws controlling private schools that purport to furnish a medical education without bothering to comply with any of the necessary standards. Under our laws, just about anyone can incorporate a school and purport to furnish a professional education. Several years ago we submitted to a legislative committee a complete documented report on a so-called

school of physical therapy, that actually provided a completely inadequate course of instruction and maintained hardly the semblance of minimum standards. Yet this school was legally permitted to exist.

Within the past month there has come to our attention the activities of Fremont College, which is "affiliated with Sequoia University," and which maintains a "School of Medicine." The literature published by Fremont College states that its school of medicine furnishes a "senior medical program," and that the school has been graded "by the American Homeopathic Medical Association, Intercollegiate Committee, as a Grade A Medical School, which entitles its graduates to apply to the National Board of Medical Examiners (Homeopathic) for final professional examinations."

In order to enroll in the senior medical program a student must have completed three years of work "in basic medical and clinical sciences." Just where, the literature saith not. The senior medical program consists of a course of forty-eight weeks and the school's literature states "successful completion of this program leads to the degree of Doctor of Medicine (M.D.)."

Other literature of Fremont College, addressed to "Dear Doctor," contains gems such as these: "Do you remember the ultrasonic devices shoplifted from doctors' offices? Do you remember the invasion of offices, rifling of files, seizing of property, mayhem and abuse of professional confidences at Long Beach? Do you have difficulty with insurance claims because the policy will pay only 'physicians and surgeons'?" It is obvious to whom Fremont College directs its appeals.

Its School of Medicine is not approved by the Board of Medical Examiners or the Board of Osteopathic Examiners. Its graduates will not qualify for examination for licensing in California. Yet the school will turn out graduates who will call themselves Doctors of Medicine and who will confuse the public.

Some means must be found to distinguish between the excellent private schools that are doing a worthwhile teaching job and the "phonies" that deceive both student and public alike. As long as such schools are permitted to flourish cultists will be with us.

4. *Blood Banks:*

During the past year we have represented the Association in connection with a dispute that existed between Valley Blood Bank and Central California Blood Bank, both located in Fresno. We are pleased to report that the dispute has been settled; that Valley Blood Bank has sold its good will and going business to Central California Blood Bank; and that as of the present time Central California Blood Bank, a nonprofit community bank, is serving the blood needs of the Fresno area.

Numerous other legal matters involving the Association have arisen during the past year, ranging from proposed legislation in the field of cancer to preparation of opinions relating to incorporation of county medical societies.

In 1956 for the first time in its history the American Medical Association sponsored a nationwide conference of attorneys representing medical societies. The conference consumed two full days and was well attended by medical society attorneys from all over the United States. In our opinion it was a most useful and educational meeting, and we hope that it will be continued. The proceedings of the conference have been published by the Law Department of the A.M.A., and officers of county societies may find it desirable to obtain a copy for reference when legal problems arise.

In addition to the writer of this report, both Mr. George A. Smith and Mr. Alan L. Bonnington of our firm have devoted a great deal of time and effort to the legal affairs of the Association throughout the year. Much credit is due them. Mr. Bonnington carried the laboring oar in the Bernstein case, and we believe performed an excellent service. It is a pleasure to be of service to the medical profession of California.

Respectfully submitted,

PEART, BARATY & HASSARD

By HOWARD HASSARD

REPORT OF THE EXECUTIVE COMMITTEE

To the President and the House of Delegates:

The Executive Committee has held meetings between Council meetings and such special meetings as were necessary. The Executive Committee has handled those matters which have been referred by the Council and other matters requiring emergency action. Routine matters, as well, have been handled by the Executive Committee in an effort to shorten the crowded agenda of the Council.

All actions are subject to confirmation by the Council and subsequently published in CALIFORNIA MEDICINE.

Members of the Executive Committee have given most generously of their time. I particularly wish to thank those members from the southern part of the state for attending the meetings in San Francisco, often on short notice.

Respectfully submitted,

IVAN C. HERON, *Chairman*

REPORT OF THE COUNCIL

To the House of Delegates:

During 1956 the Council held seven meetings and reviewed the deliberations of the Executive Committee in seven meetings held by that body during the year.

The Executive Committee meets frequently to resolve matters which would otherwise come before the Council and its decisions are subject to review and approval by the Council before becoming final. The meetings of this committee serve to clear the Council agenda of many items and to expedite the Council meetings by clarifying matters which otherwise would have to be discussed by the larger body. The Executive Committee comprises the President, President-elect, Council Chairman, Speaker, and Chairman of the Auditing Committee, with the Secretary and the Editor as ex-officio members.

Minutes of the Executive Committee meetings are published as a part of the Council minutes.

During 1956 the Council considered a number of matters which came before it from many sources. A summary of some of the major items discussed by the Council during the year is given herewith:

1. *Loans to Flood Victims.* Early in 1956 it became apparent that members of the Association in several counties would need financial assistance to provide rehabilitation from damages suffered by their offices and homes in the floods which occurred in late 1955. As an aid in providing this assistance, the Council authorized the establishment of a loan fund from which five-year loans would be advanced to members on an interest-free basis. Several members in the flood-stricken areas applied for such loans and the Executive Committee, operating under authorization from the Council, approved loans totaling $63,500. It is gratifying to note that the first repayments on these loans have already been received. Additional payments will be made quarterly until the loans have been fully repaid.

2. *Medical Care for Military Dependents.* The Council followed with a great deal of interest the proposals in

Congress for provision of uniform medical, surgical and hospital benefits to the dependents of military personnel. This program was approved by Congress and signed by the President on June 8, 1956, under the title of Public Law No. 569, which is popularly called "Medicare." The relative value studies completed by the Association in early 1956 were used by the Department of Defense in drawing up schedules of allowances for professional fees nationwide. The program went into effect on December 7, 1956, and California is expected to have the largest volume of care of any state under this plan. The Association has advised all its members of the terms and conditions of the "Medicare" program and has noted a good response from the profession in carrying it out.

3. *Relative Value Studies.* In February, 1956, the Council approved the Relative Value Studies which were carried on by the Committee on Fees of the Commission on Medical Services. This study states medical fees in terms of their evaluation to each other in terms of units rather than dollars. It is believed that this study will place all procedures in their proper relationship to all other procedures and will serve as a valuable adjunct in establishing tables of indemnification or medical and surgical fees. The Council wishes to commend the Commission and its Committee on this valuable piece of work, which has already (see above) found a nationwide application.

4. *Blood Banking.* The Council approved a set of principles to apply to blood banks which was prepared by the Committee on Blood Banks. These principles included the nonprofit status of blood banks and their operation under community auspices and representation. Acting under these principles, the Council later approved the purchase of one blood bank which was operating on a proprietary basis, so that blood in its area is now being supplied on the same standards applied in other areas of California.

5. *Student American Medical Association.* The Council approved sending two representatives of each Student A.M.A. chapter in California to the national meetings of that body, so that a continuity of representation may be assured. This has met with a most favorable response from the students involved and has drawn national comment of a complimentary nature.

6. *Graduates of Foreign Medical Schools.* The Council has voted to affirm the policies of the State Board of Medical Examiners in regard to graduates of foreign medical schools who are not American citizens. Under present regulations such graduates are required to pass the regular licensure examination in California before being authorized to serve a two-year internship in an approved California hospital. On the satisfactory completion of such internship, the applicants may then apply for an oral examination leading to a California license. Some hospitals have suggested modifications in these requirements as a means of securing additional foreign graduates as hospital house officers. The Council believes that the policies of the medical board are sound and that changes should not be made which might lead to what in effect would be a form of temporary licensure which would lead to permanent licensure under conditions not in keeping with existing standards. It is possible that legislation to amend existing requirements will be brought before the State Legislature at its 1957 session.

7. *Nurse Training.* The Council and Executive Committee have also discussed proposals which would permit the Board of Nurse Examiners to decrease the present requirement of 36 months of training to qualify applicants for an R.N. license. While some experimentation in this direction has already taken place, with some evidence of success, the Council feels that the sample to date has been inadequate for a sound evaluation of a shortened nurse training course and that further exploratory work should be done before permanent changes are made. Tbis item also may well come before the 1957 Legislature.

8. *Alcoholic Rehabilitation Commission.* The Council has been pleased to be kept informed on the proposed program of the California State Alcoholic Rehabilitation Commission. This program calls for establishment of local treatment clinics in several cities and a demonstration program for the care of acute alcoholics in general hospitals under conditions comparable to those for general medical patients. The Council has assured the Alcoholic Rehabilitation Commission of its cooperation and has assigned the task of liaison to the Committee on Mental Health.

9. *Practice of Medicine by Medical School Faculty Members.* Attention was drawn in the 1956 House of Delegates to the apparent practice of private medicine by medical school faculty members who are presumably full-time employees. This matter was referred to the Council, which has appointed a committee to study the situation. The committee has met and has held public hearings; it is anticipated that a report of the committee will be given to the 1957 House of Delegates.

10. *Industrial Accident Commission Fee Schedule.* The Council referred to the Committee on Fees of the Commission on Medical Services the matter of proposed upward revisions in the fees allowed by the Industrial Accident Commission of the State of California in cases involving industrial injuries. This committee has prepared proposed revisions in the existing schedule, which have been approved by the Council and presented to a subcommittee of the Industrial Accident Commission. It is hoped that a new fee schedule, representing increases in several basic fees, will be put into effect before the close of 1957.

In this connection the Council would call the attention of the House of Delegates to the fact that changes in this fee schedule are extremely difficult to obtain. The original schedule of fees, adopted in 1914, was amended somewhat in 1921 and then permitted to lie dormant until 1941. Efforts by the Association in the latter year to secure further upward revisions required until 1946 to accomplish. Additional revisions were made in 1950 and again in 1954 but even then some of the basic fees remained underpriced. The Committee on Fees has done yeoman work in insisting on continued reviews of this schedule in an effort to bring industrial medical and surgical fees to a realistic level in terms of existing economic circumstances.

11. *Annual Session Meeting Places.* The Council in 1954 established a policy of holding two successive annual meetings in the Los Angeles area and the third in the San Francisco area. This schedule would have put the 1958 meeting in San Francisco. When it was pointed out that the 1958 Annual Session of the American Medical Association was scheduled for San Francisco in early June, the Council voted to reverse the 1958 and 1959 meetings, so that the 1958 Annual Session will be held in Los Angeles and the 1959 meeting in San Francisco.

12. *Public Relations.* The Council has continued to review the activities of the public relations department and the Committee on Public Relations. One of the chief activities of the past year was the approval of the *Newsletter,* which is now being sent monthly to all members. The Council also approved a policy under which all releases to the press or the public which might have public relations connotations should be reviewed by the Committee on Public Relations prior to release.

13. *Disability Insurance.* During 1956 the Council was faced with the necessity of considering alternative forms

of the disability insurance contract which was first offered to members in 1954. The seven-year sickness disability benefits provided under the original contract proved to he impracticable at existing premium rates and the Council approved the reduction of this period to three years. It also approved new premiums based on age groups, not only as a means of having each age group pay its own way under this program but also as a means of making the contract more available to the new and younger members of the Association. When it is realized that hundreds of new members enter the C.M.A. each year and that their number must be considered in maintaining a minimum percentage participation, these revisions assume great importance. The seven-year sickness benefit provisions have been retained for those qualifying members who wish to meet the increased premium.

14. *Medical School Deans.* The Council has issued invitations to the deans of the five medical schools in California to attend Council meetings. It is pleasing to note that representatives of several of the schools have been present at the meetings and have participated when subjects of mutual interest were under discussion.

15. *Intravenous Injections by Nurses.* During 1956 the Council approved a statement which was jointly prepared by representatives of the Association, the California Hospital Association and the California State Nurses' Association on the subject of the starting of intravenous injections by registered nurses. This had been a controversial item for some time because of legal implications, and the new agreement, which represents customs considered to be legally sound, should clarify this matter. Under the agreement, registered nurses who have had adequate training in administering intravenous injections will be permitted to start and supervise such injections on the orders of a physician. Where such orders are given orally, it is expected that they will be reduced to writing as soon as possible.

16. *Litigation.* The Council was pleased during the year to learn of the satisfactory completion of litigation in one county medical society where legal questions had been raised over the inability of some membership applicants to secure a favorable vote on their applications. The Association had taken an active interest in this litigation because of the community of interest between all county societies.

17. *Professional Liability Insurance.* The Council has been kept advised during the year of progress made in studies instituted by the Medical Review and Advisory Board relative to the causes underlying court actions claiming liability. The Council approved distribution of a pamphlet to all members, in which some of the basic considerations were discussed. Additional material in this field will doubtless be forthcoming in future months, subject to review by the Council and by public relations officers prior to its release. The Council believes the studies so far undertaken will have a healthful effect in decreasing professional liability claims and costs.

18. *State Department of Public Health.* The Director of the California State Department of Public Health has continued to attend Council meetings and to keep the Council advised on matters of common interest in the field of public health. During 1956 one of the major items has concerned the distribution and use of poliomyelitis vaccine and the Council has voted to support a program planned for early 1957 for the vaccination of all Californians under age 40. Details of this program are left to local determination between health authorities and medical organizations and the Council hopes that adequate arrangements will be made in all counties for a successful campaign to immunize the great bulk of potential polio victims.

19. *California Physicians' Service.* The Council has welcomed the continuing reports by officers of California Physicians' Service and has been pleased to note the healthy growth in both physician and subscriber membership. The affairs of C.P.S. are obviously in good condition and its service to the public appears unquestioned. It is fortunate that an organization of the caliber of C.P.S. was available for launching the "Medicare" program and providing the fiscal services needed for such a large undertaking. The Council looks forward with confidence to further enhancement in the public service of C.P.S.

20. *Legislation.* The Council is kept advised of all legislative activities by the Committee on Legislation and believes this function is being handled most effectively at this time. Legislative reports will be forthcoming from time to time during the 1957 general legislative session, and the members will be advised of important developments. The Council wishes to express its appreciation of the tireless efforts of the Public Health League of California in so ably cooperating in all legislative matters.

21. *Conclusion.* The items listed above comprise the major topics considered by the Council during 1956. Additional items are to be found in the minutes of Council meetings, which are regularly published in the journal.

Should further matters be deemed subject to report prior to the meeting of the House of Delegates, a supplementary report will be made before that body.

Respectfully submitted,

DONALD D. LUM, *Chairman*

REPORTS OF DISTRICT COUNCILORS

FIRST COUNCILOR DISTRICT

San Diego County

To the President and the House of Delegates:

During the past year I have attended all of the regular meetings of the Council and the annual meeting of the House of Delegates, the minutes of which have been duly reported in CALIFORNIA MEDICINE.

I have continued to serve as chairman of the Commission on Public Health and Public Agencies and also as chairman of the Committee on State Medical Services. In addition I have been a member of the General Advisory Committee for Crippled Children's Services for the State of California, served also on the Advisory Committee of the Morbidity Research Project for the State Health Department and been a member of the Ad Hoc Advisory Committee on the prophylaxis of polio.

The activities of the Medical Society in San Diego in the past year have detailed the changing of the offices of the medical society to their own building which they occupied during the year, adjacent to the San Diego Blood Bank. During the year there has been a successful conclusion of the prolonged litigation between the Complete Service Bureau and the San Diego Medical Society. The San Diego County Society has adopted the principle of the relative-value fee schedule and has endorsed the usual fee plan for benefit of indemnity insurance programs.

It has been my pleasure to serve as councilor for the first district and I shall continue to be happy to serve in an effort to correlate activities of San Diego County medical societies with those of the California Medical Association.

Respectfully submitted,

FRANCIS E. WEST, *Councilor,*
First District

SECOND COUNCILOR DISTRICT

Imperial, Inya, Mana, Orange, Riverside and San Bernardina Caunties

To the President and the House of Delegates:

The county associations which comprise the Second District have all been visited by the councilor and officers of the California Medical Association.

The hospitality extended to the California Medical Association officers and myself by the local associations at the time of our annual visitation, as well as at other times, is gratifying and very much appreciated.

I have been particularly impressed with the deep interest of the individual members in the problems and affairs of the California Medical Association. This atmosphere is conducive to the cultivation of a healthy local as well as a statewide organization of doctors of California.

Respectfully submitted,

OMER W. WHEELER, *Councilor,*
Second District

THIRD COUNCILOR DISTRICT

Las Angeles Caunty

To the President and the House of Delegates:

I have attended most of the meetings of the Council during the last year and in my consideration the Association is in excellent hands.

This is not much of a report but I believe it will suffice as no one ever notices these reports anyway.

Respectfully submitted,

H. CLIFFORD LOOS, *Councilor.*
Third District

FOURTH COUNCILOR DISTRICT

Las Angeles Caunty

To the President and the House of Delegates:

The councilor for the Fourth District has attended all the regular and special meetings of the Council during the 1956 calendar year.

An effort has been made to convey the actions of the Council to the branches of the Los Angeles County Medical Association which comprise the Fourth Council District both at their regular meetings and meetings of the offices of the branches of the Los Angeles County Medical Association.

The Fourth Councilor District has continued to grow rapidly and at the present time contains well over half the membership of the Los Angeles County Medical Association.

Thus some 3,500 members of the Los Angeles County Medical Association and therefore the California Medical Association comprise the Fourth Councilor District at this time.

Respectfully submitted,

E. E. WADSWORTH, JR., *Councilor,*
Fourth District

FIFTH COUNCILOR DISTRICT

San Luis Obispa, Santa Barbara and Ventura Caunties

To the President and the House of Delegates:

It has been a real pleasure to serve as councilor of the Fifth District during the past year. The cooperation and lines of communication between the Tri-County Societies and the California Medical Association have never been better.

Mr. John Hunton, Mr. Robert Thomas, Mr. Ben Read, Mr. Gene Salisbury, Mr. Ed Clancy, Mr. Glenn Gillette, Doctor Donald A. Charnock and Doctor Frank A. MacDonald have been most helpful in keeping the members of the Tri-County Societies informed and up to date on the latest developments affecting the practice of medicine.

Respectfully submitted,

ROBERT O. PEARMAN, *Councilor,*
Fifth District

SIXTH COUNCILOR DISTRICT

Calaveras, Fresna, Kern, Kings, Madera, Maripasa, Merced, San Jaaquin, Stanislaus, Tulare and Tualumne Caunties

To the President and the House of Delegates:

During the year 1956, I attended all Council meetings and participated in all assigned work by the Council.

It is with great pleasure that I report the purchase of the Valley Blood Bank in Fresno by the C.M.A.-sponsored Central Valley Blood Bank. This will serve to improve greatly the situation of the C.M.A. blood bank system and all blood banking in the Fresno area.

Respectfully submitted,

DONALD C. HARRINGTON, *Councilor,*
Sixth District

SEVENTH COUNCILOR DISTRICT

Manterey, San Benita, San Matea, Santa Clara, and Santa Cruz Caunties

To the President and the House of Delegates:

The Seventh District has continued its usual good growth, both in population and in number of practitioners, resulting in a marked overcrowding of some of our existing hospital facilities even with the new hospital construction of the past few years.

The San Mateo and Santa Clara counties' close cooperation and participation of the members of these societies with the Doctors' News Conference has brought it the rating, by the San Francisco *Examiner*, as the best locally sponsored TV program. This program is on Channel 4 from KRON.

All the component societies of the area have had at least one meeting with the local Bar Association with the resulting improvement of relationship and a sympathetic feeling for one another's professional problems.

Respectfully submitted,

JAMES H. MCPHARLIN, *Councilor,*
Seventh District

EIGHTH COUNCILOR DISTRICT

San Francisca Caunty

To the President and the House of Delegates:

As councilor from the Eighth District for the California Medical Association, I have reported regularly on the Council meetings to the San Francisco Medical Society's Board of Directors. I served as a member of the Council's Budget Committee and as chairman of the Nominating Committee for C.P.S. Trustees.

The young physicians' program was an outstanding society project during the year, with the second annual fall reception for medical students and house staffs attracting over 800. The Public Health League, the Woman's Auxiliary, and the C.M.A. assisted with the reception, as well as with a series of forum-social meetings. A successful student preceptorship program was inaugurated under the chairmanship of W. Dayton Clark. The society's loan fund for interns and

residents helped several young people, and a new loan fund was instituted for young physicians beginning practice.

Participation in community activities was stressed by President Matthew N. Hosmer among his goals for the year, and there was gratifying recognition by the city government and various agencies that anything affecting health or welfare is of special concern to the medical profession. The society was asked to frame new requirements for teachers' health examinations and to help secure a medical director for the school department. Suggestions for changes in San Francisco's emergency hospital system were referred by the mayor to the society and were studied by a special committee, which recommended no major change.

The society worked closely with the Community Chest Health Council, which held its meetings at society headquarters, and with the Council cosponsored an educational television program and collaborated on a booklet listing local health and welfare services.

The society contributed financially and actively aided the organization of the Bay Area Poison Control Center and contributed to the San Francisco Hearing Center (which was started by a society committee and is still supervised by it). Support was given to the business community by memberships in the Better Business Bureau, the San Francisco Junior and Senior Chambers of Commerce and the California State Chamber.

The Professional Liaison Committee met frequently with representatives of allied professions, and the Legal Liaison Committee arranged the second annual medical-legal dinner.

Our new building and auditorium were used frequently for society and auxiliary meetings as well as by ancillary organizations, and the building was designated as a medical station in the event of disaster.

Although no doubt there are many complex problems ahead in San Francisco as in every county, the growing activity and interest of society members in its affairs indicates there will be effective assistance in finding solutions to some of medicine's problems.

Respectfully submitted,

SAMUEL R. SHERMAN, *Councilor,*
Eighth District

NINTH COUNCILOR DISTRICT

Alameda and Contra Costa Counties

To the President and the House of Delegates:

The Alameda-Contra Costa Medical Association continued expansion of its public service program during 1956.

The Child Welfare Committee gained national recognition of its child accident prevention program. Through this program, more than 300,000 bill inserts have been distributed by A.C.C.M.A. members to patients. The medical aspects of aspirin poisoning, burns, and garage-injury prevention have been insert topics to date.

A Fraudulent Practices Committee was established this year. This committee has met with and is actively aiding those local, state and federal agencies charged with the apprehension and prosecution of fraudulent practitioners and the practice of medicine by irregulars and cultists.

The *Disaster Plan for Medical Services* of the A.C.C.M.A. was put into effect in 1956. It was condensed in the November 11th J.A.M.A., and copies of the plan have been requested by 46 medical societies throughout the country.

Labor Welfare Funds continued to seek the counsel of the Medical Services Committee for improving benefits and indemnities in their health plans.

Forty-six fee complaints were referred to the Distribution of Medical Care Committee during the year, 38 of which were successfully arbitrated; 8 are pending.

The Medical Practices Committee received 110 new liability complaints in 1956. This represents a decrease of 32 complaints from the preceding year. Twenty-six complaints were screened out as not requiring the committee's consideration. The committee continues to meet monthly, in addition to interim meetings with legal counsel to prepare for trial.

The Intra-Professional Committee held indoctrination meetings for 117 new A.C.C.M.A. members during 1956.

Respectfully submitted,

DONALD LUM, *Councilor,*
Ninth District

TENTH COUNCILOR DISTRICT

Del Norte, Humboldt, Lake, Marin, Mendocino, Napa, Solano and Sonoma Counties

To the President and the House of Delegates:

In general, the activities and progress of the various counties of the Tenth District have been satisfactory, and from every aspect, it has been a successful and progressive year. Again, as in the recent years, the individual counties were kind enough to adjust their own meeting schedules so as to fit in to the convenience of the California Medical Association officers and especially the president-elect, Dr. Frank MacDonald. In some instances, this necessitated special meetings, on other occasions, it coincided with regular county society meetings.

The meeting always featured the president-elect, Dr. MacDonald as the main speaker with Dr. Bostick as chairman. Other visiting members from the C.M.A. or the Public Health League of California attended the meetings too and were present for answering the questions that were invited after the main address. These men were introduced to the members of the society but did not speak since by having a single major address by Dr. MacDonald, it was possible to present a uniform sequence of thought and problems to the audience and made the entire evening more lucid and coherent as well as providing a better device for the relative emphasis of the various activities and problems of the C.M.A.

The northern counties of Mendocino-Lake were visited one evening and the Humboldt-Del Norte group on the next. The Mendocino-Lake group at Ukiah was particularly lively in their discussion both immediately after dinner and following adjournment with group discussions in the lobby. At Eureka with the Humboldt-Del Norte County group, an excellent evening was enjoyed during which, not only was the program very well received but the visiting officers were pleased indeed with the report of President Loring regarding the county activities during the past year and particularly in his announcement of the impending publication of the new county bulletin.

The Napa County activity was very good, and of course, since it is the home of this year's President of the American Medical Association, Dr. Dwight Murray, it has received the focus of much state and national attention. They had several testimonial banquets for Dr. Murray during the year, not only by the county society but also, one initiated by the County and City of Napa in honor of their eminent citizen. The *Bulletin* of the Napa County Society continues to thrive although the usual awkward interlude of change of editors from Dr. Pinkney to Dr. Way occurred during the year. Your Councilor was unable to be present during the visit of the C.M.A. officers this year because of the necessity of attending medical meetings in Chicago.

The Solano County meeting was at the Green Valley Club and had a fine attendance. Its Mental Health Committee was very alert in providing pertinent suggestions regarding the proper relationships between psychologists and medicine as

well as in formulating philosophies in relationship to the alcoholic rehabilitation activities of the state. Past C.M.A. President John Green has again been asked to represent his county as a delegate to the C.M.A. and is thus again able to contribute his great experience, energy and ability to the welfare of his county, the state and American medicine.

Marin County has experienced a more rapid growth during the year than has any of the Tenth District. It has prepared for this by having an active orientation program for new members which has been most worthwhile and necessary. Under the presidency of Dr. William Culmer, successful progress has been made in the field of the *County Bulletin,* hospital relations, median fee lists, press relations and cooperation with the new Babcock Foundation for private aid of the medical needy.

It is apparent that each county has made alert, worthwhile advances that have been the result of the dedicated efforts of their respective officers and the intelligent and enlightened support of their individual members. It was a pleasure indeed for your Councilor to serve this district again and he takes great pride in being associated with such dedicated societies.

Respectfully submitted,

WARREN L. BOSTICK, *Councilor,*
Tenth District

ELEVENTH COUNCILOR DISTRICT

Alpine, Amador, Butte, Colusa, Eldorado, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Sacramento, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Yolo and Yuba Counties

To the President and the House of Delegates:

The year 1956 was a continuing year of health and vigor in the affairs of organized medicine in this district. All societies are functioning well, no major frictions or disasters have occurred. There is a growing number of doctors in each community and an increasing number of well-trained medical specialists are seeking out locations in the smaller communities of Northern California.

The undersigned was reelected to a second term as district councilor at the annual meeting of the C.M.A. this year. I have attended all meetings of the Council and have accompanied the officers of the C.M.A. on their visits to each of the component societies of the district. Each meeting was thoroughly enjoyable and the C.M.A. and its officers were well received.

The greatest honor of the year was the election to the office of president-elect of the C.M.A. of Dr. Frank MacDonald from Sacramento. The many faithful years of willing and thoughtful service Dr. MacDonald has given to the doctors of this district were recognized by his elevation to this post. The district proudly shares with him in this distinction.

Respectfully submitted,

RALPH C. TEALL, *Councilor,*
Eleventh District

REPORTS OF COUNCILORS-AT-LARGE

To the President and the House of Delegates:

As a councilor-at-large I have attended the meetings of the Council of the California Medical Association and have taken part in the business of the committees to which I have been assigned. As a member of the Council appointed to the Board of Trustees of California Physicians' Service I have acted as president of California Physicians' Service, beginning in May of 1956. During this period the affairs of California Physicians' Service have been quite active including the assumption of the capacity of fiscal agent for the California Medical Association in the government military dependents "Medicare" program.

I was elected to fill the vacancy created by the death of Dr. Francis Hodges as commissioner from the eleventh district to the National Blue Shield Commission, this representing all the western states and Hawaii. This involved making trips to Chicago on national Blue Shield affairs in November, January, and February. At the February meeting I participated in a panel discussion on the implications of Blue Shield locally and nationally. In March, 1957 the annual conference of the national Blue Shield and Blue Cross Plans is held in San Francisco and the California Physicians' Service is especially involved in these proceedings. Through many meetings, official and otherwise, an effort has been made to keep informed on the various problems of medicine and to transmit that information wherever it has seemed appropriate. Prepayment is of necessity influencing the practice of medicine as well as medical education to a greater and greater degree and more time has to be spent by the medical profession in an attempt to guide this influence into the proper channels. Implementation of our own Blue Shield Plan is the best way to exert this influence and the American Medical Association House of Delegates at Seattle went on record as endorsing such implementation.

Respectfully submitted,

T. ERIC REYNOLDS, *Councilor-at-Large*

To the President and the House of Delegates:

I have attended all meetings of the Council the past year and with officers of the California Medical Association visited most of the county medical societies in Southern California. The various committee reports indicate continuing hard work in behalf of patients and medicine. These reports as well as the many other matters to come before the Council were all carefully studied and acted upon in the best judgment of the Council.

The published reports and proceedings of the Council indicate the many problems and considered thought that has been given them and all affairs of the Association by the elected officers and employees.

Respectfully submitted,

ARTHUR E. VARDEN, *Councilor-at-Large*

To the President and the House of Delegates:

It has been a pleasure to serve as a councilor-at-large this past year.

I have attended all meetings and have participated in the discussions and decisions of the Council.

In addition, as chairman of the Medical Services Commission, it has been my duty to keep the Council informed on the work of the commission.

Respectfully submitted,

H. L. CAREY, *Councilor-at-Large*

To the President and the House of Delegates:

As councilor-at-large I have attended the regular meetings of the Council of the California Medical Association and taken part in the discussion and decisions of the Council. In addition, committee or other assignments have been carried out.

I have endeavored to translate the wishes of the House of Delegates and Council to county societies; to other organizations including California Physicians' Service as Council-appointed trustee; to Blue Cross of Northern California as

trustee; and to both the California Academy of General Practice as well as the American Academy of General Practice as a founder member of each.

In turn, requests, questions, and problems of these organizations as well as the membership at large of the California Medical Association have been referred to the Council for suggestions or action.

Respectfully submitted,

IVAN C. HERON, *Councilor-at-Large*

To the President and the House of Delegates:

During the past year I have attended all of the meetings of the Council of the California Medical Association. I have participated actively in all of its deliberations involving our California Medical Association. As chairman of the Health and Accident Insurance Committee, I have obtained the approval of the Executive Committee and the Council for the development of new plans. These new plans consist of 3 years medical disability program for those who complained they could not afford the 7-year plan and the continuance of the 7-year plan for those who wished it, at a higher rate of premium. This has served to stabilize our insurance program. As a result we can now offer to our members a 3-year or a 7-year medical disability program with a life time disability for accident.

Respectfully submitted,

ARTHUR A. KIRCHNER, *Councilor-at-Large*

To the President and the House of Delegates:

The councilor-at-large has attended all meetings of the Council, and has submitted reports of various committees under the Medical Education Commission to the Council.

It has been a pleasure to serve the Association as councilor-at-large and reports of his activities can be found in the reports of the Postgraduate Committee and in the report of Audio-Digest, the nonprofit subsidiary of the California Medical Association.

Respectfully submitted,

EDWARD C. ROSENOW, JR., *Councilor-at-Large*

REPORTS OF COMMISSIONS

CANCER COMMISSION

To the President and the House of Delegates:

This report covers the activities of the Cancer Commission for the year 1956-57. The commission is pleased to report that progress has been made in pursuing the objectives of the previous year, developing certain new projects, and planning for the future.

The problem of cancer quackery remains a continuing interest of the commission and also a continuing threat to the cancer control program in California.

The Cancer Commission and others have realized for some time that more effective legislation is needed to combat cancer quackery in California. To this end, through the commission's efforts, the American Cancer Society, California Division, has joined with the California Medical Association, the California Osteopathic Association, the State Department of Public Health, and others, to bring about the introduction of anti cancer-quack legislation into the current session of the legislature. This legislation has received support from many lay organizations, including the major newspapers of the state, as well as several radio and television broadcasting organizations. The project was undertaken with the approval of the Council.

It is the opinion of the Cancer Commission that if this legislation can be passed and activated, it will do a great deal to curb the threat of cancer quackery in California.

During the year the brochure entitled "Unconventional Cancer Treatment Methods" was prepared by the commission and distributed to the members of the California Medical Association. The brochure outlines the more common unconventional treatment methods currently employed in the state. The publication has been well received by the physicians of California, and we have had requests from physicians in other parts of the country for copies of this brochure.

The commission continues to receive national recognition for its work in the field of cancer quackery. We have had several requests from other state medical associations concerning the organization and functions of the Cancer Commission, with particular reference to combating the menace of cancer quackery.

Doctors L. Henry Garland, David A. Wood, and John W. Cline continue to be members of the American Cancer Society's committee which is engaged in an effort to solve the problem of cancer quackery on the national level. Doctor Garland serves as chairman of the Committee on Diagnosis and Therapy of the National Research Council, which actively participates in this field.

Doctor Garland has presented two addresses before medical groups on the subject of cancer quackery, which have received national recognition. The American Cancer Society is contemplating publishing Doctor Garland's paper in order that it may be given wider distribution. We hope that this publication will be forthcoming in the near future.

The county medical societies continue to demonstrate an interest in this field, and have been cooperative in publishing material furnished them by the commission.

The Alameda-Contra Costa County Medical Association has recently established a committee to deal with this problem, and a very close working liaison has been established between the committee and the Cancer Commission. It is recommended that other county medical societies follow a similar pattern in the effort to control cancer quackery in their counties.

The commission will continue its efforts to keep the members of the Association informed of developments in the quackery field. It is convinced that the practicing physician can best cope with the problems involved if he is adequately informed. Likewise, the commission requests the members of the California Medical Association to furnish it with information concerning the activities of those employing unconventional methods of therapy in their communities.

The Medical Director appeared on a panel at the Third Annual Conference on Rural Health, at which time he had an opportunity to discuss cancer quackery. At this meeting not only physicians who were in attendance but a number of farm people expressed a vital interest in the matter. The Medical Director is cooperating with the California Division of the American Cancer Society in its program of informing the public concerning cancer quackery. A brochure has been developed by the Division for distribution to the public. This brochure has been given wide distribution and should be helpful in the over-all program of combating this serious menace.

Other activities of the Cancer Commission may be summarized as follows:

1. Consultative Tumor Boards continue to be an important part of the work of the Cancer Commission. Approximately sixty-five Tumor Boards are operating regularly throughout the state. The Medical Director makes periodic

visits to these boards and assists them in their administrative problems whenever possible. Several hospitals have indicated their desire to establish new tumor boards, and the Medical Director has assisted them in formulating the necessary administrative details.

The California Division, through its branches, provides financial support to approved Tumor Boards in the form of secretarial assistance and consumable supplies. The commission believes that this support is a worthwhile expenditure of funds and that several boards would not be able to continue in operation without this generous support.

During the year the Cancer Commission had the privilege of meeting with the Cancer Committee of the American College of Surgeons. At this meeting mutual problems of the two organizations were thoroughly discussed. It is our feeling that this meeting was most constructive and accomplished a great deal.

2. In the field of professional education the Cancer Commission remains active. A total of seventeen cancer conferences were held at local county medical societies during the year, with an attendance of about 1,130 physicians, which represents approximately 46 per cent of the total membership of the county societies in which conferences were provided.

The cost of these conferences was about $2,310.00 and was shared by the Cancer Commission and the California Division of the American Cancer Society. There appears to be an increased interest on the part of county medical societies for this type of program and it is hoped that in the coming year more conferences can be held.

The Tumor Tissue Registry of the Cancer Commission continues to be a potent professional program. Successful Pre-Convention and Mid-Winter Tumor Tissue Slide Conferences were held and were well attended by the pathologists of the state. The Pre-Convention Radiology Conference was a success and attracted a large number of radiologists.

The Medical Director has assisted in planning these conferences. Two professional publications of the American Cancer Society known as the "Monograph Series" and "CA: A Bulletin of Cancer Progress" are distributed to the physicians of the state. The cost of this distribution is shared by the commission and the California Division. Any member who is not now receiving these publications and desires to receive them, may have his name included in the mailing list by contacting the Medical Director of the Cancer Commission.

An exhibit entitled "Care of the Patient with Advanced Cancer" was prepared and shown at the annual meeting of the California Medical Association in Los Angeles. A brochure on the same subject was prepared and used in conjunction with the exhibit. Several hundred copies were distributed and since that time the article has been printed in California Medicine, Vol. 85, No. 4, October 1956, page 267 to page 274. Fifteen hundred reprints of this article were obtained by the Michigan Medical Association for distribution to its members.

3. The Cancer Commission has been working closely with the Bureau of Chronic Diseases of the State Health Department in furthering the Central Tumor Registry. An Advisory Committee to the Central Tumor Registry has been appointed by the President to assist in the operation and conduct of the Central Tumor Registry. The Cancer Commission believes that this is a splendid project, and is fully supporting the Registry in order that it may be as effective and useful as possible.

The commission wishes to express its appreciation to Dr. Dwight L. Wilbur, editor of California Medicine, for his consistent cooperation and support of the program of the commission.

The chairman desires to express his deep appreciation to the other members of the Cancer Commission and the members of the Advisory Committee for their diligent efforts and support during the past year, without which it would have been impossible to report substantial progress.

Respectfully submitted,

John W. Cline, *Chairman*

COMMISSION ON MEDICAL EDUCATION

To the President and the House of Delegates:

The Commission on Medical Education is an official grouping of committees which in large part have very little in common. Therefore, there have been no formal meetings of the commission.

The chairman of the Commission has acted as liaison officer between the individual committees and the Council and has arranged for reports to the Council and on occasion has made reports for individual committees.

Respectfully submitted,

Edward C. Rosenow, Jr., *Chairman*
Commission on Medical Education

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Committee on Blood Banks

The work of the C.M.A. Committee on Blood Banks during 1956 was almost entirely concerned with the C.B.B.S. This was due to the fact that no new banks were established or contemplated during the year.

The committee was relieved of responsibility in the Central California-Valley Blood Bank situation in that the Council of the C.M.A. with its legal advisor took over entirely in the negotiations that resulted in the purchase of the Valley Blood Bank by Central California.

Meetings: The fourth annual meeting of the California Blood Bank System was held at San Diego February 24 and 25, 1956. An excellent scientific program included the following:

"The Role of A B O Subgroups in Blood Transfusions" by Cmdr. J. J. Engelfried of the U. S. Naval Hospital at San Diego.

"Platelets in Blood Banking" by Grant R. Bartlett, Ph.D. of the research department of Scripps Metabolic Clinic.

"Metabolism of Red Cells During Storage" by Harry N. Barnet, Ph.D., director of research department of the San Diego Blood Bank.

The administrative session was devoted mainly to discussions regarding the changes in philosophy and fee schedules of the various banks and the effect of insurance payments for transfusions. At the business meeting Dr. Upton presented recommendations of the C.M.A. Committee on Blood Banks as approved by the Council of the C.M.A. that blood banks sponsored by the C.M.A. (1) should be nonprofit corporations approved by their local medical society, (2) should conform to existing requirements for the processing of blood, (3) should submit a financial history and a yearly audit for approval by the committee, and (4) should submit to a periodic survey by the C.M.A. Committee on Blood Banks to determine the efficiency of their blood service and such other matters pertinent to the administrative and technical operation of their blood bank.

Although the banks recognized the importance of the basic principles involved and were not opposed to them, the majority were opposed to the recommendations as submitted as being inconsistent with the autonomy of the banks, several of which are controlled by lay boards of directors. It was decided that a committee should be ap-

pointed to study the problem and a revised recommendation be sent to the Council of the C.M.A.

A meeting of the C.M.A. Committee on Blood Banks was held in Los Angeles, April 28, 1956. At this meeting it was voted to recommend to the Council of the C.M.A. that the Valley Blood Bank be purchased by Central California as the only solution to the difficult problem.

A special meeting of the California Blood Bank System's board of directors was held in San Francisco on November 3, 1956.

Pacific District Clearing House of the American Association of Blood Banks: At the annual meeting of the California Blood Bank System in San Diego in April 1956 the blood banks as far east as Wyoming were invited to send representatives to an organizational meeting of the Pacific District Clearing House. Banks represented were Belle Bonfils at Denver and Service League Community at Pueblo, Colorado; Southwest Blood Banks, Inc. at Phoenix, Arizona; Washoe Medical Center Blood Bank at Reno; Tacoma-Pierce County Blood Bank at Tacoma, Washington, and King County Blood Bank at Seattle. The Honolulu Blood Bank wired its approval and desire to participate. The twelve banks of the California System had previously voted in favor of a Pacific District Clearing House in lieu of a California State System Clearing House. By majority vote the Pacific District Clearing House of the A.A.B.B. was established and an organizing board of directors was elected. Plans were laid whereby this organization would be ready to function January 1, 1957. The California Blood Bank System Clearing House went out of existence December 31, 1956.

Exhibits: The C.B.B.S. exhibit of 1955 was redesigned and was displayed at the California Blood Bank System meeting in San Diego, February 24 and 25, 1956; at the California Medical Association convention at Los Angeles, April 27 and 28, 1956; at the joint meeting of the International Transfusion Association and the American Association of Blood Banks at Boston, September 3 to 5, 1956; at the American Cancer Society meeting in San Francisco, October 8 to 12, 1956; and at the California Association of Medical Laboratory Technicians meeting in San Francisco, October 27, 1956.

Joint Blood Council: The failure of the Joint Blood Council to accomplish one of its main purposes, that of working out plans for contractual arrangements for blood for the Department of Defense, was brought to light when again the Red Cross asked the assistance of community banks in procuring blood for processing of serum albumin. Because of the most unsatisfactory experience as subcontractors to the Red Cross during the Korean episode there was general reluctance on the part of the banks to participate. Upon the urging of the Committee on Community Blood Banks of the A.A.B.B. several of the banks in the System have agreed to participate but none, as yet, have received contracts or have been assigned quotas.

Problems that have and are developing such as payments for blood by insurance companies or welfare funds and Veteran Administration Hospital contracts are causing some banks to change their policies and others to give serious thought to changes. Based on their past records it is the conviction of this committee that each bank will solve its problems and will continue to give the best possible service to its community at the lowest possible cost.

Blood Processed by System Banks 1956—178,500 units.

Respectfully submitted,

Andrew M. Henderson, Jr., *Chairman*
Committee on Blood Banks

Committee on Industrial Health and Rehabilitation

The culmination of efforts: Subcommittee for Studying of Grasping Power of the Committee on Industrial Health and Rehabilitation can be referred to and read—California Medicine, Volume 85, No. 5, November 1956, pages 314-320.

"Evaluation of Grip Loss—A Factor of Permanent Partial Disability in California": John E. Kirkpatrick, M.D. Reprints are available.

Projects of School of Medicine—U.C.L.A.—Fred Bryan, M.D.—Professor of Medicine—Senior Medical Students—Didactic Lectures and Clinical Tours of Large Industrial Plants—Summer 1957—Recess Assignments 2-2½ months in an Industrial Medical Department—"Industrial Internship—Is a way of educating future doctors to the relationship of industry to the health of the employer and to the responsibility of the future physician, to the worker with respect to his health and with respect to obligations and responsibilities of industry, and in turn with respect to his own responsibility to both."

Short postgraduate courses covering the application of Industrial Medical Principles to private practice. Two semesters—each eight two hour lectures.

Section on Industrial Medicine and Surgery—C.M.A. Meeting April 29, 1956, a.m. and p.m. and April 30, 1956 p.m. Included two guest speakers—Wm. P. Shepard, M.D., and T. de Villafane Lastra, M.D., Argentina.

Contemplated: Western Regional Industrial Health Conference to include: Western Industrial Medical Association, Members of C.M.A. interested in Section on Industrial Medicine and Surgery, Industrial Nurses, Governmental Hygienists, Industrial Hygienists and others. Tentative date —October, 1957—three days—Los Angeles.

Your chairman attended and reported at the 16th Annual Congress on Industrial Health in Detroit, January 23-24, 1956. Has forwarded his annual report and plans to again attend and will participate in the 17th Annual Congress in Los Angeles, February 4-5-6, 1957.

Respectfully submitted,

Jerome W. Shilling, *Chairman*
Committee on Industrial Health and Rehabilitation

Committee on Medical Education and Hospitals

Basic Science Examining Law for California: The matter of securing legislation to provide a basic science examining law for California came up, and the C.M.A. Council referred this to our committee. We discussed it and it was felt that there was considerable material available on this subject. We would be happy to gather the basic material together. This would entail a good deal of work, however. This is a matter of basic policy for the Council to decide if this is the proper time, and if it is feasible to follow through now.

Resolution No. 11, concerning trends in nursing education, adopted by the C.M.A. House of Delegates, May 2, 1956, was referred to our committee for study by the House of Delegates. This resolution was introduced by Dr. Matthew N. Hosmer of San Francisco. Dr. Leon P. Fox of San Jose has a special interest in it. The resolution was brought about by the development of an experimental coordination plan in nursing education now under way in San Francisco, and by similar problems in other counties.

A permanent Coordinating Committee on Nursing Education has been established under the auspices of the Liaison Committee of the Board of Regents of the University of California and the State Department of Education. Dr. Dwight L. Wilbur of San Francisco represents the C.M.A.

We obtained information on the current activities of that committee and referred it to these interested physicians. It seems that this information is adequate and covers the subject well to date. Doctor Wilbur is alerted regarding the interest of our committee in this subject and will keep us informed of further developments.

Commission for the Improvement of the Sick in San Francisco: The C.M.A. was asked to have representatives meet with this commission, whose main objectives revolve around professional nursing services in hospitals and other problems connected with the care of patients while hospitalized or being transported to or from hospitals.

The secretary of the commission is Miss Madeline L. Ritter of San Francisco. We have met with Miss Ritter. When their objectives have crystallized to the point where the C.M.A. can be helpful, we will report to you further.

Respectfully submitted,

HAROLD G. TRIMBLE, *Chairman*
Committee on Medical Education and Hospitals

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Committee on Mental Health

The Committee on Mental Health sent a questionnaire to all the psychiatrists in California requesting their views on a community mental health services program. The response was completely in favor. A series of meetings with interested persons and groups led to the drafting of a tentative bill for the establishment of a community mental health service program. This was done jointly by the mental health committee, the legislative committee and legal counsel for the C.M.A.

The chairman of the Committee on Mental Health appeared before the Senate Interim Committee on Licensing Business and Professions to oppose the proposed certification bill for psychologists and also for the licensing of psychiatric technicians.

In November your chairman represented the C.M.A. at the Governor's Conference on Mental Health in Sacramento and the A.M.A. Council on Mental Health meeting in Chicago.

Respectfully submitted,

ALFRED AUERBACK, *Chairman*
Committee on Mental Health

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Committee on Postgraduate Activities

During the past year your Postgraduate Activities Committee has continued the program underway since 1950. During the year the undersigned has acted as chairman of the committee, assisted by Herbert W. Jenkins of Sacramento, John E. Young of Fresno and ex-officio members for the medical schools as follows: Seymour M. Farber, University of California, San Francisco; J. Ward Smith (January 1 to June 30) and Lowell Rantz (July 1 to December 31), Stanford University; Phil R. Manning, University of Southern California; Thomas H. Sternberg, University of California at Los Angeles; and Harold M. Walton, College of Medical Evangelists. On July 1, Mrs. Margaret H. Griffith was appointed as director of Postgraduate Activities and C. A. Broaddus became consultant to the committee.

During the year a new advisory group of district representatives from the various geographical areas of the state was appointed as follows: E. F. Cain, Anaheim; G. Horace Coshow, Carpinteria; H. C. Covington, Selma; Charles H. Cutler, Sacramento; Max Dunievitz, Auburn; James B. Massengill, Ukiah; J. Leslie Spear, Santa Rosa; and Edwin W. Tucker, Monterey. These physicians have been active in postgraduate activities over the past several years and they will be able to assist the Postgraduate Committee greatly in bringing to our attention special problems and needs for postgraduate work in all parts of the state. This group met with the Postgraduate Activities Committee for the first time on July 15, 1956 in San Francisco.

We have conducted five two-day Postgraduate Regional Institutes in five regions of the state, each comprising several county medical societies as follows: One each at Laguna Beach for Southern counties; Santa Rosa for the North Coast counties; Fresno for San Joaquin Valley counties; Carmel for West Coast counties; and Lake Tahoe for Sacramento Valley counties. The fee was $10 to attend any one or all of the Institutes, but will be changed to $15 for Institutes to be given in the 1957 season. Total registrations were 738 with nearly 200 of these physicians attending more than one Institute. The academic program at each Institute is offered by one of the five medical schools after consultation with the local regional committee representing the various county medical societies. We are especially indebted to the five postgraduate directors of the medical schools, their fine faculties for the excellent programs they have furnished, and to Regional Chairmen Ardath H. Wightman, Laguna Beach; R. H. Kass, Fresno; Allen C. Mitchell, Carmel; R. Dee Robbins, Santa Rosa; G. Horace Coshow, Carpinteria; and John W. Rovane, Sacramento, and their committees for their unstinting efforts in handling all details ensuring the success of these conferences. The presidents and committee chairmen of the women's auxiliaries have assisted greatly with registration and entertainment of wives during the programs.

Circuit Courses, consisting of lectures and conferences, and afternoon clinics in some cases, four in spring and four in fall, were put on in the northern part of the state in Ukiah, Eureka, Woodland (spring only), Napa, Dunsmuir, Chico, Marysville and Auburn, by faculty groups from the University of California and Stanford University Schools of Medicine. There were approximately 125 physicians registered in these courses with fee of $25 for both fall and spring, and $15 for spring only. We are grateful to Dr. Seymour M. Farber of University of California and Drs. J. Ward Smith and Lowell Rantz of Stanford University and their faculty members who arranged and presented the programs. Local chairmen for Circuit Courses are to be thanked for their unusual efforts which include not only organization but collection of fees, rendering financial and other reports. Several resident physicians accompanied instructors from the two schools on the circuit tours, this project supported financially by the C.M.A. Public Relations Department. Reports of the success of this venture from both the schools and physicians in attendance have led us to plan to continue this venture in the future.

New Circuit Courses are to begin in February, 1957, in San Luis Obispo, Santa Maria and Santa Barbara, with program offered by faculty members from University of Southern California under the leadership of Postgraduate Director Phil R. Manning. Heavy returns on the advance announcement cards have been received and we believe these new courses will be most successful, serving the expressed need of physicians in these areas for postgraduate courses in their own communities. We are grateful to local chairmen Albert Gazin and Henry A. Zevely of San Luis Obispo; Clifford E. Case, Santa Maria; and G. Horace Coshow, Carpinteria, for their initial organizational work in beginning these courses.

An ever-enlarging Medical Dates Bulletin, a monthly publication listing all postgraduate assemblies and medical meetings given in the state, has been published by this committee for the past four years. The Bulletin mailing list of nearly 1,000 includes presidents and secretaries of all

medical organizations in California, hospitals, medical schools, libraries, etc. Though the Bulletin is published monthly in California Medicine, the listing is also offered for publication to all county societies in the state and many county bulletin editors are publishing all or part of Medical Dates Bulletin.

In April, the Annual Postgraduate statewide all-day conference was held in Los Angeles attended by 40 doctors including the five medical school postgraduate directors, regional representatives from all parts of California, representatives from the Academy of General Practice and other medical organizations including heart, cancer and tuberculosis associations, and the standing members of your committee. This is a unique and important meeting at which work of the past year is reviewed and plans for the coming year are discussed in detail.

Efforts have been doubled this year in bringing to the attention of California Medical Association members reports of new postgraduate courses available to them in the medical schools of the state. Information and many requests made by various physicians and organizations in the state have been sent to the medical schools for specially needed intra and extramural courses. Postgraduate directors of the medical schools have been asked to give talks at each institute regarding new courses available and new teaching methods being used. Announcements of these courses, by our personnel, have been made and brochures distributed at program planning meetings and during institute and circuit courses programs. Letters were prepared and mailed to 200 hospitals and medical organizations in Southern California announcing and recommending the new Teaching Clinics at UCLA School of Medicine and the new Bedside Clinics at USC School of Medicine on September 20, 1956.

Your chairman and our Postgraduate office, on behalf of this committee, again assisted in program planning for the Monterey County Heart Association Symposium given in Monterey December 5 and 6. The Postgraduate directors at USC, UC and Stanford, gave valuable assistance on this project. These services are available to any medical organization in the state needing assistance in postgraduate planning and organization.

Dr. Broaddus attended the meeting of the States' Medical Postgraduate Association in Chicago on February 14, 1956. Mrs. Griffith attended the meeting of the Association of American Medical Colleges in Colorado Springs, November 11 to 14, 1956.

In October our Postgraduate office conducted a survey of postgraduate activities in the state medical associations of the United States. Replies were received from 35 of the 48 states contacted, indicating that most of the larger state associations were interested and actively participating in postgraduate medical education. The majority of courses directly sponsored by the various associations were given in rural or suburban areas, away from the medical centers in larger cities. In many cases, state societies cooperated with medical schools either by offering courses jointly, or by publicizing them to their membership. There was also a great deal of cooperation with component county medical societies and other medical organizations. Few if any of the programs were completely self-supporting. Though this is a comparatively new field and criteria are not as yet well delineated, it was found that California Medical Association compared very favorably in development, leadership and attainment in postgraduate medical education. A summary of this survey has been distributed to all members of our committee, the Association of American Medical Colleges Postgraduate Committee and the American Medical Association Postgraduate Committee. Material received has been made available to all medical school postgraduate divisions in the state.

Dr. Broaddus again built the Postgraduate exhibit for the C.M.A. Convention in Los Angeles, April 29 through May 2, which received much favorable attention.

I wish also to thank members of our committee: Herbert Jenkins and John E. Young, for their valuable services in connection with the Northern Circuit Courses and the Sacramento Valley counties and San Joaquin Institutes, in addition to their attendance and help at all committee meetings and the statewide conference.

Respectfully submitted,

Edward C. Rosenow, Jr., *Chairman*
Committee on Postgraduate Activities

COMMISSION ON MEDICAL SERVICES

To the President and the House of Delegates:

The Commission on Medical Services has, during the past year, continued its work in the field of prepaid medical care insurance and medical economics. All of the commission's committees have been active and reports or recommendations originating therein have been considered by the entire commission and forwarded to the Council.

Throughout the past year, several major considerations were studied by committees and the commission. Perhaps the most important was Public Law 569, commonly called the Medicare Plan. The commission urges all physicians to help make this program successful. The most important phases of the Medicare program are those of free choice of physician for the dependents and the right of each county medical society to arbitrate disputes about fees charged by physicians within the county. These features of the program can only be preserved by our own actions and interest.

The commission has, on several occasions, urged the county medical societies to establish closer liaison with management representatives in the respective counties. We again urge that this be done.

The function of the commission and its committees can best be reported by a review of the specific activities undertaken during the year.

Respectfully submitted,

Hollis M. Carey, *Chairman*
Commission on Medical Services

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Committee on Fees

The Relative Value Schedule, developed by the committee last year, has had extremely wide distribution. To date, we have furnished in excess of 15,000 to interested persons and organizations nationwide.

The theory and substance of the Relative Value Schedule was adopted by the Department of Defense in the preparation of a fee schedule for the Medicare program of the federal government. Its use in this program will allow for a testing of the theory nationwide.

The committee has made recommendations to the Commission on Medical Services regarding the fee schedule to be submitted to the government in negotiations for implementing the Medicare program. The committee will review that schedule and any inequities which are called to our attention, prior to the contract renegotiation date.

The Committee on Fees has continued to study the theory of the Relative Value Schedule for the state of California and has just recently accepted a similar listing of relative values for anesthetic services.

The committee still feels that there must be continuing study of this subject, to correct inequities and to make necessary changes which will increase the schedule's usefulness.

A new Subcommittee of the Committee on Fees has been appointed to deal with the Industrial Accident Commission and the Minimum Fee Schedule to be paid under the Workmen's Compensation Act. This Subcommittee requested the C.M.A. to file a petition with the Industrial Accident Commission requesting an increase in the basic fee to be paid for medical services and also to clarify certain areas of irritation which have existed since the last fee schedule was published and made effective October 1, 1954. Such a petition has been filed. The Subcommittee is representing the C.M.A. in the negotiations with the Industrial Accident Commission. Public hearings in Los Angeles and San Francisco have already been held. The Subcommittee is doing everything in its power to accomplish an upward revision of the basic fees paid for medical services under the Workmen's Compensation Act.

Respectfully submitted,

FRANCIS J. COX, *Chairman*
Committee on Fees

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Committee on Government Financed Medical Care

The committee was appointed by the Council to act as the negotiating team with the Department of Defense and the Department of the Army in providing for the implementation of the Medicare program. Your chairman made repeated trips to Washington and had the constant counsel of Mr. Richard Lyon, vice-president of C.P.S., Mr. Hassard and others. The contract and the fee schedule are the best that could be obtained for the initial trial period of the contract. Both come up for renegotiation in July, and we hope to correct some problems which have arisen.

The success of this program is vital to medicine. It is the first time that the government has given the profession the privilege of acting in the capacity of advisors whose words carry a great deal of weight, and has specifically stated its desire to maintain and support the essential elements of private practice.

In order to retain these essential rights, it is incumbent upon the profession to make the program a success.

California already has established itself as having one of the better programs among the states. One which was implemented in the best manner and is operating with the least amount of difficulty.

The committee is being informed on developments nationally and will continue to represent the C.M.A. in the best manner possible.

Respectfully submitted,

JOHN M. RUMSEY, *Chairman*
Committee on Government Financed Medical Care Programs

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Committee on Indigent Care

During the past year, the committee has undertaken, through Stanford Medical School, a statistical study of the costs of one California county in providing medical and hospital care to the indigent and welfare population.

The basic thesis for this study is the assumption that county governments are spending far more money on medical care and the county hospital than they realize. If the true costs could be discovered, the amount would be staggering.

It is the committee's belief that once a method for determining true costs can be developed, that ways of saving county money can be developed. Through C.P.S., it is possible, we believe, to develop an outpatient program, featuring ambulatory care, home and office care at a cost which will be offset by the savings made in cost to the county in operating its hospital.

The results of this study are being compiled at the time of this writing.

This work may be an asset in developing additional programs which, through government monies, may be inaugurated in the future.

The committee has recently been combined with the Committee on Problems of the Aged. This move was deemed advisable in view of the close proximity of interest and problems. A large percentage of the aged population fall into the welfare and indigent groups.

Respectfully submitted,

C. L. COOLEY, *Chairman*
Committee on Indigent Care

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Committee on Maternal and Child Care

The functions of this committee were transferred to the Commission on Public Health and Public Agencies but, pending a change in the California Medical Association By-Laws, this transfer is still unofficial.

The committee has held several meetings and has met with the State Department of Public Health. The result of these meetings was the formation of a cooperative venture between the C.M.A. and the Public Health Department to study maternal and perinatal mortality. The state has been divided into four maternal mortality districts, and a regional committee is being organized in each district. A committee has been activated to develop the necessary forms for such a study. We visualize the completion of the preparatory phase early in 1957, and progress from then on in the actual study of the maternal mortalities.

The study of perinatal mortality is progressing very slowly as there are few guide-posts for such a study. The committee is working to develop the scope of this study.

As chairman of this committee, I have met with the Bureau of Maternal and Child Health of the State Department of Public Health. The study of premature birth in the state of California is continuing, and emphasis is being placed on improved prenatal care. Two major problems are pressing in the state:

1. The lack of uniform standards of care, especially in the county hospitals; and
2. The infrequency with which certain segments of the population utilize the prenatal care which is available to them.

Respectfully submitted,

DONALD C. HARRINGTON, *Chairman*
Committee on Maternal and Child Care

* * *

Committee on Medical Economics

The committee has conducted a survey of presently available *Deductible Comprehensive* Health Insurance policies being offered by commercial insurance companies. This type of insurance is growing rapidly.

The committee has recommended to the commission that C.P.S. add its influence to the development of this relatively new type of health insurance by developing a policy incorporating an initial deductible and truly comprehensive coverage, but paying to an "average or usual fee," rather

than "normal charges less co-insurance," which is the popular practice among the commercial carriers.

It is our hope that such a policy may come into existence in 1957.

Respectfully submitted,

ROBERT M. SHELTON, *Chairman*
Committee on Medical Economics

* * *

Committee on Problems of the Aged

California's aged population continues to grow at an accelerated pace. The medical profession is aware of the need to devise some method by which these senior citizens can receive medical care with ease and without relying on county or charity care. It is the hope of this committee that a greater awareness of the need for some type of program for these people will add stimulus to the extension of medical care insurance and pension plans which provide for the payment of premiums after the age of 65 or retirement.

The elder citizens need not only readily accessible medical care outside the bounds of the county hospital, but also companionship, and acceptance by the community as useful citizens. We do not believe that it is medically sound to force retirement upon someone merely because that person has reached the age of 65. Many persons can continue to perform useful functions long after that age.

State and federal governments have taken an increasing interest in the aging population. Commercial insurance companies and Blue Shield plans are conducting experiments in extending the age limits in medical care insurance coverage. In fact, people over the age limits used to be barred from membership in many Blue Shield plans. Now, two-thirds of the plans have no age limits for new group subscribers and seven plans accept individual enrollments at any age.

After meeting with the A.M.A. committee at the Interim Meeting in Seattle last November, the impression gained from all the discussion is that the principal concern is providing means for the care of the older people which would not offend their esthetic and economic sense of independence; but the discussion on ways and means and the great importance of an economic plan and program for attaining a modicum of independence by the retired oldsters was very limited, and no conclusions were arrived at.

It was decided that further meetings on a national level were necessary before any conclusions were likely to be reached.

Several discussions with underwriters of our large insurance companies revealed that they are greatly interested in this problem, and some have formulated rather comprehensive plans which they may advance soon. It is to be hoped that private industry determines the direction which will maintain a trend with the accent on the individual responsibility for care of retired people in their twilight years.

With the passage of P.L. 880 and the work being done by other committees of the commission, we hope that a program for California is in the offing.

Respectfully submitted,

E. R. LAMBERTSON, *Chairman*
Committee on Problems of the Aged

COMMISSION ON PROFESSIONAL WELFARE

To the President and the House of Delegates:

The commission herewith forwards and endorses reports of the constituent committees as presented below.

Committee on Health and Accident Insurance

The committee, consisting of Ivan C. Heron and T. Eric Reynolds, met regularly throughout the year.

At the annual meeting of the California Medical Association, the Lumberman's Mutual Casualty Company informed the Insurance Committee and the Council of the California Medical Association that they could no longer continue the seven-year program because of the high loss ratio unless the premium was substantially raised. They felt they should be given an opportunity to bring in other plans because of the losses sustained in the initial three years of operation. The Council approved such action and for that reason no open bidding for other programs occurred. The Lumberman's Mutual submitted to the Insurance Committee, the Executive Committee and the Council, seven different plans for their consideration.

There was a special meeting of the committee with the Executive Committee on the 4th of June, 1956, in San Francisco, at which time we tried to develop the program most likely to satisfy the needs of our organization. We were unable to accomplish it at the time and for that reason another meeting was held on the 25th of June, at which time there was approved a three-year sickness disability plan. The three-year plan answered the complaints of the doctors under forty, who stated they could not afford the seven-year plan and it also answered in part the complaint of doctors above age sixty who did wish to have more than two years of medical disability insurance. This final three-year plan was approved by the Council and the Executive Committee of the C.M.A. and this Insurance Committee on July 28, 1956, at the meeting of the Council in Los Angeles.

After it became known that the California Medical Association had adopted the three-year plan and was planning to drop the seven-year plan completely, there developed considerable criticism because doctors felt those who had taken on the seven-year plan wished to continue it even though a premium raise was necessary. After much negotiation involving two or three months, the committee approved the continuance of the seven-year plan at a higher premium rate. This gave the California Medical Association two plans: (1) Covering three years for medical disability, and (2) covering seven years for disability. It would appear that the California Medical Association has again taken leadership in Health and Accident Insurance because states like Texas, Massachusetts, and others have only the three-year plan. Many national organizations are dropping the long-term medical coverage plans to a two-year plan above age sixty. So it would seem the California Medical Association is rather fortunate to be able to offer to the doctors of California the plans developed during the past year.

The committee is of the opinion that independent consultation and advice is desirable during the next year for a careful analysis of our present insurance plan and other bids which may be presented to our committee. It is recommended that funds for such consultation be made available for the coming year of 1957-58.

I wish to thank the members of my committee for the tolerant indulgence in the many problems arising during the past year. They have been invaluable and without them it would have been most difficult.

Respectfully submitted,

ARTHUR A. KIRCHNER, *Chairman*
Committee on Health and Accident Insurance

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Medical Review and Advisory Board

The board was created by the California Medical Association to meet its responsibilities to the profession and the

public in relation to professional liability. The principal objectives of the board at the present time are:

1. To *review* claims and conduct other research to discover and report the causes of malpractice and of unwarranted malpractice claims and suits.

2. To *advise* the profession on all aspects of medical malpractice, including (a) The prevention of malpractice and of unwarranted professional liability claims and suits; (b) The correct handling of professional liability claims and suits to the end that the rights of both physician and patient are protected; (c) Adequate professional liability insurance.

In its work to achieve these objectives the board has done the following:

1. *Review and Research:*

Current, day-to-day data on professional liability claims against physicians are being collected by the board. This is made possible through the cooperation of the county medical societies and the carriers of the group malpractice insurance programs which are in operation in most of the counties throughout the state. Statistical analysis of this information will be made and reported each year. Such analyses will yield increasingly useful and reliable information on the major sources of the growing malpractice problem.

A major research project on the human relations aspects of the malpractice problem is being conducted under the direction of the board.

2. *Advisory:*

The prevention of malpractice and of unwarranted claims and suits: The board has distributed an outline of a malpractice educational program, which summarizes its work and recommendations in this area to date. Further recommendations for prevention have been made and are being considered.

The correct handling of claims and suits The board has distributed a detailed "how-to-do-it" paper on this subject to officers of county medical societies and to chairmen of their committees which deal with the malpractice problem. Individual assistance has been given to county societies upon request. Several of the county societies are now doing intelligent and effective work in claims handling.

Adequate professional liability insurance: The chairman, legal counsel and executive secretary of the board have done a great deal of work, at the request of county societies, to achieve this objective in some counties and to continue the availability of adequate insurance in others.

Two conferences featuring intensive instruction on the above objectives were held—one in Los Angeles and one in San Francisco. Two hundred thirty officers and members of county society committees dealing with malpractice attended these full-day conferences and discussed their problems with leading experts in the field.

Respectfully submitted,

JOSEPH F. SADUSK, JR., *Chairman*
Medical Review and Advisory Board

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Committee on Unlawful Practice of Medicine

The committee has not received any assignments from the Council of the C.M.A. and therefore has not held any meetings.

Respectfully submitted,

A. A. MORRISON, *Chairman*
Committee on Unlawful Practice of Medicine

In conclusion, the commission recommends that funds be appropriated for the Committee on Health and Accident Insurance for the purpose of expert consultation and advice on the present program and future offerings by insurance carriers.

Respectfully submitted,

JOSEPH F. SADUSK, JR., *Chairman*
Commission on Professional Welfare

COMMISSION ON PUBLIC HEALTH AND PUBLIC AGENCIES

To the President and the House of Delegates:

The Commission on Public Health and Public Agencies has held one meeting during the year. Due to the divergent interests of the committees under the commission, each chairman submits periodic reports on the activities of his committee.

Each committee of the commission has been active during the year and individual reports are presented below.

Respectfully submitted,

FRANCIS E. WEST, *Chairman*
Commission on Public Health and Public Agencies

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Committee on Military Affairs and Civil Defense

The members of this committee are as follows: Frank F. Schade, Los Angeles; Wayne P. Chesbro, Berkeley; Justin J. Stein, Los Angeles, chairman; and L. S. Goerke, Los Angeles, consultant.

All the members have been and are very active in civil defense. Dr. Wayne P. Chesbro is chairman of the Disaster Committee of the Alameda-Contra Costa Medical Association and Region 2 Medical Chief. Dr. Frank Schade is chairman of the Civil Defense Committee of the Los Angeles County Medical Association and Region 1 Medical Chief, and Dr. Justin J. Stein has been chairman of the Governor's Emergency Medical Advisory Committee since 1950, as well as chairman of this committee. Dr. L. S. Goerke has been very active in both medical civil defense and in selective service.

Dr. Wayne Chesbro and Dr. Frank Schade are members of the Governor's Emergency Medical Advisory Committee. This is most important in helping coordinate federal, state and local planning.

The civil defense problems are being continually reevaluated based on new information as it is released. This is very important and plans have been left as fluid as possible.

Studies are being made regarding the feasibility of mass evacuation of centers of population provided that adequate warning has been received. Measures to improve communications are being taken.

The plans and equipment for radiological defense are the best of any in the United States.

Natural disasters which have occurred in this state and other parts of the country have helped reveal a weakness in the civil defense programs. Steps have been taken to correct such deficiencies.

The MEND program is being expanded to incorporate military and disaster medicine into the medical school curricula. This is an important contribution to civil defense.

The training program for first aid workers, nurses in disaster nursing, and others, in furthering medical civil defense, continue to be active.

Attempts are being made to obtain additional mobile

army surgical hospitals. This type of unit can serve as an emergency hospital or as a resupply to existing permanent or temporary hospitals. Their locations have been carefully planned so that they will be available after an attack.

During 1957-1958 this committee hopes to further develop its plans for mutual aid between the regions and states, to continue the development of plans and procedures for handling atomic, biological and chemical warfare casualties, develop the procurement and supply program for actual operations, continue investigation into the handling of mass care centers, evacuation and dispersion problems, and to keep things flexible so that plans can be rapidly changed to conform with changes as they develop in civil defense.

A survey of civil defense preparedness in the county medical associations of the California Medical Association will be made early in 1957. It is hoped that a meeting can be held in 1957 with the members of the disaster and civil defense committees of the county medical groups.

The Southern California Advisory Committee to Selective Service has reviewed the files of all priority I and II classified in a class other than 1-A, available for military service, making sure that these priority men were adequately considered before expiration of the "Doctor's Draft" legislation June 30, 1957. The files of registrants who had been called up for induction six months to three years ago and whose induction was postponed pending commissioning by a branch of the armed forces, were reviewed. It was discovered that several of these men were denied commissions for various reasons and actually were not available for service. Those registrants who were rejected at the induction station for administrative reasons and classified in IV F have also been reviewed and reconsidered where the reason for rejection had been removed. There has been no difficulty in meeting calls for physicians although a number of men have had their first year residencies interrupted.

The local advisory committees appointed by the county medical societies have continued to do an honest, conscientious job. The expiration of the Special Doctor's Draft legislation June 30, 1957 will leave no provisions for the Advisory Committees to Selective Service and the armed forces. It is strongly recommended that the national, state and county committee structures remain intact to provide advice and guidance to selective service in the induction of physicians, dentists and veterinarians under the future amended regular draft legislation and to be ready to operate in an emergency. Organized medicine's active support of the armed forces career program, including senior medical students commissioning, residents commissioning and deferment, and the internship and residency programs, is recommended.

Respectfully submitted,

JUSTIN J. STEIN, *Chairman*
Committee on Military Affairs and Civil Defense

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Committee on Other Professions

During 1956 the Committee on Other Professions met on four occasions and a member of the committee went to Seattle at the request of the Council of the C.M.A. to obtain clarification and suggestions from official representatives of the A.M.A. regarding certain matters pertaining to osteopathy in California.

Contact with the California Osteopathic Association has been maintained through a comparable committee from that organization and a number of problems which are the mutual concern of both professions in California have been, and are, under consideration. Whether a solution of this rather involved and difficult over-all problem can be obtained in the relatively near future is problematical. Several other groups and organizations are intimately concerned and must, of necessity, participate in any changes which are ultimately approved.

Certain problems which had arisen pertaining to the administration of intravenous fluids by nurses were solved on a mutually agreeable basis in meetings between the California State Nurses' Association and this committee.

Respectfully submitted,

WAYNE POLLOCK, *Chairman*
Committee on Other Professions

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Committee on Rural and Community Health

The principal activity of the Committee on Rural and Community Health during the year 1956-57 has been its participation in the California Rural Health Council. A member of the committee has taken an active part in each of the bi-monthly meetings of the Rural Health Council and this has proved to be a potent force in helping to guide and advise the Council on matters pertaining to medicine, and health in general. Further, this participation has been productive of a better understanding of medicine's problems on the part of the other groups represented. Conversely, we have been enlightened by the association and consequently will be in a position to work more effectively towards a solution of our common problems, in the future.

The efforts of the Community and Rural Health Committee and the California Rural Health Council will culminate in the third annual Rural Health Conference to be held in Sacramento, January 25 and 26, 1957. Members of the committee have played an active part in the planning of this conference, which is expected to attract three to five hundred registrants, and will participate in the conference itself. Mr. Glenn Gillette of the C.M.A. Public Relations department, has done yeoman service in the organization of this conference.

Your committee feels that its activities have borne fruit, in better public relations, on a statewide level. We believe, however, that in the future some means of stimulating interest in similar activities on a more local or regional level should be devised. Probably it is within the medical profession itself that the greatest stimulation is needed. It is our belief that local lay groups and individuals are already interesting themselves in matters relating to health, and that in too many instances they lack the professional and organized guidance that only the medical society can offer them. At least two means of accomplishing this are available; an educational program directed to the county society and one day regional conferences patterned after the state conference.

Respectfully submitted,

ROBB SMITH, *Chairman*
Committee on Rural and Community Health

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Committee on School Health

Throughout the past year, the committee, in cooperation with the county medical societies, has held one statewide and nine Regional Conferences on Physicians and Schools.

All of these meetings received the active support of physicians in private practice, the educational and public health professions, and organizations such as the P.T.A., etc. These conferences were held in the following locations and included the following counties:

1. Hotel Sainte Claire in San Jose, including San Mateo, Santa Clara, Santa Cruz, San Benito and Monterey counties.

2. Stockton College in Stockton, including San Joaquin, Sacramento and Stanislaus counties.

3. University of Southern California in Los Angeles, including Los Angeles County.

4. Fresno State College, including Merced, Fresno, Tulare, Madera, Kings and Kern counties.

5. Balboa Park in San Diego, covering San Diego, Riverside, Inyo, Mono, Imperial, Orange and San Bernardino counties.

6. Richardson Mineral Springs, covering Butte, Glenn, Placer, Nevada, Sierra, Siskiyou, Yolo, Lassen, Plumas, Modoc, Shasta, Tehama, Yuba, Sutter and Colusa counties.

7. Mar Monte Hotel in Santa Barbara, including Ventura, Santa Barbara and San Luis Obispo counties.

8. Sonoma Mission Inn in Boyes Springs, covering Humboldt, Sonoma, Marin, Mendocino, Lake, Napa and Solano counties.

9. Hotel Claremont in Berkeley, covering San Francisco, Alameda and Contra Costa counties.

The committee wishes to commend the county medical societies for establishing active school health committees. There is still much to be done in improving the health protection of school children. The committee encourages all county medical societies to work closely with school personnel in furthering and making more effective the contributions already made.

All physicians are urged to know and support the school health programs in their locality.

It is the committee's opinion, based on the results of these meetings, that medicine's role in school health is one of vital and active participation.

Respectfully submitted,

ALBERT C. DANIELS, *Chairman*
Committee on School Health

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Committee on State Medical Services

This committee has continued to be active throughout the year participating in multiple activities in conjunction with the State Health Department, continuing to serve in advisory capacity in the Crippled Children's Services, The Ad Hoc Advisory Committee on the prophylaxis of polio and on the advisory committee on the Morbidity Research Project.

In addition to the above activities this committee meets with the State Health Department representatives prior to each state council meeting to discuss the multiple problems of mutual interest which develop in the public health field.

Respectfully submitted,

FRANCIS E. WEST, *Chairman*
Committee on State Medical Services

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Committee on Veterans Affairs

The committee on Veterans Affairs has continued through the year to keep abreast of the interest in veterans problems, both on a national and state level. Resolutions adopted by veterans' organizations have been reviewed.

The number of veterans in California is still unknown. Some estimates place the figure at over two million.

Respectfully submitted,

BERTHEL H. HENNING, *Chairman*
Committee on Veterans Affairs

COMMISSION ON PUBLIC POLICY

To the President and the House of Delegates:

Committee on Public Relations

With the permission of the President and the members of the House of Delegates, the members of the Committee on Public Relations request the privilege of permitting Dr. Sidney J. Shipman, chairman, to make a supplementary report from the floor at the 1957 meeting of the Association.

* * *

Following last year's meeting of the House, members of the Committee on Public Relations decided that C.M.A.'s ever-increasing membership could best be informed of the Association's many activities through the publication of a monthly *Newsletter*.

Newsletter has been established. The members of the Auxiliary and students, residents and interns, and delegates to A.M.A. from other states, have been added to the list of regular C.M.A. readers, bringing the total circulation to in excess of 23,000.

The introductory issue of *Newsletter* declared:

"Though it may be said in a million different ways, the best public relations are those fine and respected relations established between the individual physician and the individual patient right in his own office."

The activities of the PR Committee, implemented by the PR personnel and aided by county society officers and an outstanding group of executive secretaries in the more populous counties of the state, are still—and always will be—focused upon that basic precept.

The importance of orientation of new members and transfers from other states was recognized by the House in a 1956 resolution. The PR Committee has, through education—and persuasion—succeeded in encouraging a stepped-up indoctrination program at the level of the county societies.

This effort is being furthered by constant liaison with the students of the five California medical schools.

San Francisco physicians, in concert with C.M.A., have been making excellent progress with students of the University of California and Stanford University by carrying on an educational program supported by social meetings of physicians and their wives and students and their wives.

In May the doctors in Los Angeles will host students of the College of Medical Evangelists, U.C.L.A., and the University of Southern California, and residents and interns of the hospitals in the area, at the fourth annual Public Relations and Office Management Convention.

In addition to discussions of the maintenance of high ethical standards for the professional protection of the public, the responsibility of the profession to provide: (1) Twenty-four hour emergency medical care service, (2) Care regardless of ability to pay, and (3) A forum for the solution of misunderstandings between physician and patient, is stressed.

Continuity, it has been found by the PR Committee, is of utmost importance.

Consequently, the committee's efforts are more routine than spectacular. They include:

Making available *on order from the county societies*, printed public relations material over the signature of the society for distribution to the public.

Making available a modest budget to advertise the society's emergency medical care telephone number.

Making available the revised Health Record for mothers of the physicians' young patients.

Making available a new First Aid Chart approved by the Committee on School Health. These charts are printed by C.M.A. and have found a growing acceptance by county

societies. The name of the society and the emergency telephone number is printed on the chart. It is hoped that in the coming year a C.M.A. First Aid Chart will be on display in every California classroom. They have also been made available for distribution by the physician to his patient.

President Charnock and President-elect MacDonald have been of exceptional assistance in carrying the public relations message personally and directly to members of each of the 40 component county societies. It has been the pleasure and privilege of the executive personnel of the PR Department to arrange and be present at these meetings.

Tape recordings of important C.M.A. messages have been sent to county societies, the last being Dr. John W. Rumsey's explanation of "Medicare."

As always, PR representatives have been "on call" to assist county society officials and members in all the various facets of the Association's affairs.

Likewise, PR representatives have been privileged to "sit in" with practically all C.M.A. committees including cooperation with the very capable California Physicians' Service executives and officials of the Public Health League.

Commenting on the 25th anniversary of the PHL, the February issue of *Newsletter* states:

"To be sure, in our complex society of 1957, we need over-all public relations to translate medicine's position to the public. And, we need the PHL's guidance to translate medicine's position to legislative bodies. But the Hippocrates, the Webster and the Blackstone of all this 'translation' still finds its roots in the good deeds of the individual doctor."

* * *

As this is being written, polio inoculation campaigns are gaining statewide attention. It is our sincere hope that in our supplementary report we may have the pleasure of reciting the record of the profession's complete cooperation and that there will be no instances where a person was denied the vaccine or the services of a physician because of inability to pay.

A malpractice suit, as has often been said, is poor public relations landing in the court room.

But it does not end there. A suit is not just a legal encounter between a single physician and an individual patient since the usual widespread publicity can adversely affect the thinking of thousands of people—patients—judges and juries.

It is our hope, too, therefore, that our subsequent report may speak of the continuing progress of the Medical Review and Advisory Board made possible by the cooperation of the entire profession. Off to a fine start, the committee's work points to a gradual lessening of the ever-present threat of unfounded legal action.

As noted in the *Newsletter* editorial, "all this has been said before." The public relations of the dignified medical profession is not—and should not ever be—spectacular.

If the sound, "patient first" public relations program is maintained; if the individual physician continues to realize that he is the key to success and he follows the advice of his elected leaders, outside intervention is most unlikely and as *Newsletter* concluded, he will be "free to listen!"

Respectfully submitted,

SIDNEY J. SHIPMAN, *Chairman*
Committee on Public Relations

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Committee on Legislation

The following is an interim report of the Committee on Legislation and, with the permission of the President and members of the House of Delegates, your chairman will render a supplementary report from the floor at the 1957 meeting of the House of Delegates.

Since the previous report to the House of Delegates your Legislative Committee has continued in active function. Your committee has represented the California Medical Association before the various interim committees of both the Senate and the Assembly when these committees have considered matters pertaining to the public health. Further, your Legislative Committee has been actively engaged in supporting those legislators and candidates who, by their records, have shown an interest in the furthering of measures and ideas beneficial to the public health. Realizing that good legislators are not elected accidentally but only through the combined efforts of interested citizens you have been actively represented in these various endeavors through your Legislative Committee.

As always in the past your Committee has had the very excellent assistance of Mr. Ben Read, Executive Secretary of the Public Health League, and Mr. Gene Salisbury, Assistant Executive Secretary of the Public Health League. Mr. Howard Hassard, legal counsel of the California Medical Association, has been of tremendous assistance to your Legislative Committee in carrying out its various duties.

On behalf of your committee composed of J. Lafe Ludwig, M.D., Justin Williams, M.D., and myself I wish to thank the many doctors and their executive secretaries who took such an active part in assisting your Legislative Committee throughout this past year.

Respectfully submitted,

DAN O. KILROY, *Chairman*
Committee on Legislation and
Commission on Public Policy

JUDICIAL COMMISSION

To the House of Delegates:

The Judicial Commission was formed under the revised By-Laws adopted in 1955, to succeed the Council of the Association as the body to hear appeals from members who are charged with infractions of medical ethics. Full provision for the protection of the rights of individual members is made in Chapter 3 of the By-Laws.

During 1956 the Judicial Commission was called upon to hear only one appeal. A hearing was held, with legal counsel present for the member, and a decision has been rendered. For obvious reasons such cases are not publicized but the Judicial Commission stands ready to provide its services when appeals of this nature are received.

The chairman wants to thank the other members of the commission for their services and their willingness to attend to this judicial function of the C.M.A. These members are W. Philip Corr of Riverside, John C. Ruddock of Los Angeles, C. V. Thompson of Lodi, Arlo A. Morrison of Ventura, Floyd O. Due of Oakland, Sam J. McClendon of San Diego, Hartzell H. Ray of San Mateo, and, serving as secretary, Alhert C. Daniels of San Francisco.

Respectfully submitted,

DONALD A. CHARNOCK, *Chairman*

REPORTS OF STANDING COMMITTEES

AUDITING COMMITTEE

To the President and the House of Delegates:

The Auditing Committee is now working on the preparation of a budget for the 1957-1958 fiscal year. The budget will be presented to the Council prior to the annual session

and, following its approval there, will be placed before the House of Delegates.

Preparation of the annual budget and a review of the Association's expenditures throughout the year constitute the two main responsibilities of the Auditing Committee. Two members of the committee review all expenditures each month; these are rechecked annually by the certified public accountants who audit the C.M.A. books. The report of the accountants is published in this issue under the report of the Treasurer.

Respectfully submitted,

IVAN C. HERON, *Chairman*

COMMITTEE ON SCIENTIFIC WORK

To the President and the House of Delegates:

The Committee on Scientific Work has been attempting to improve the scientific portion of the annual meeting and wishes to commend the section officers for their fine cooperation and efforts in obtaining outstanding papers for the 1957 meeting.

The committee has held two meetings with the officers of the seventeen scientific sections and plans have been made to integrate the general meetings into the overall scientific program so that the Association's guest speakers are utilized to the fullest possible extent. You will note that there are central themes running through the two general meetings. These general meetings were arranged by Doctor Donald W. Petit, secretary, Section on Internal Medicine, and member of the Committee on Scientific Work.

This year there will be no television and attempts are being made to schedule the medical motion pictures at times when the subject matter will not conflict with similar scientific papers.

The committee urges all members of the Association to attend the general meetings and the scientific sections.

Respectfully submitted,

ALBERT C. DANIELS, *Chairman*

REPORT OF MEDICAL EXECUTIVES CONFERENCE

To the President and the House of Delegates:

The Medical Executives Conference was set up under the revision of the By-Laws two years ago, the outgrowth of the former Advisory Planning Committee. It meets regularly, usually on the day preceding meetings of the C.M.A. Council, and has followed that schedule during the past year.

Members of the conference are the staff executives of the Association and the executive secretaries who serve full-time with the county medical societies. The conference is an advisory body only and any recommendations adopted by it are reported to the Council for consideration.

During the past year this group has been mainly concerned with matters of public relations and medical economics. While no important decisions were transmitted to the Council, it is worthy of note that the meetings of this group furnish an excellent forum for the discussion of ideas and the dissemination of information to the county societies on a uniform basis. By timing the meetings on the days preceding Council meetings it is possible for many of the county society representatives to attend Council sessions and keep abreast of the official deliberations of the Association. This contact is considered by all conference members as extremely valuable.

Respectfully submitted,

JOHN HUNTON, *Chairman*

REPORTS OF SPECIAL COMMITTEES

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

To the President and the House of Delegates:

The California delegation to the American Medical Association gained one new member in 1956 due to the increased membership of the C.M.A. At both the Chicago meeting in June and the Seattle meeting in November, California was fully represented by fourteen Delegates or their seated Alternates. In addition, it is pleasing to report that practically all the Alternates were in attendance at one or both of these meetings.

During 1956 California had no specific program of its own in the A.M.A. House of Delegates but the Delegates followed all business brought up. In each of the two sessions, four Californians were honored with appointments to reference committees.

At the June meeting the delegation tendered a reception to Doctor Dwight H. Murray of Napa, who had just been installed as A.M.A. president. Also honored was Doctor E. Vincent Askey of Los Angeles, who serves so ably as Speaker of the House of Delegates.

For 1957 California will be entitled to elect its fifteenth Delegate and Alternate to the A.M.A. and it is hoped that the same high caliber of representatives as now characterize the group will be added. The delegation stands ready at all times to carry out the wishes of the C.M.A.

Respectfully submitted,

ROBERTSON WARD, *Chairman*

COMMITTEE ON HISTORY AND OBITUARIES

To the President and the House of Delegates:

This committee held one meeting during the year, in late April just preceding the annual Association convention in Los Angeles. All three members were present to discuss the writing of the Association's history. At that meeting the opportunity was taken to examine the material collected for several years by the late George Kress, honorary historian, in preparation for writing the history. Several hours were employed at this task and a preliminary sorting was done. The small amount of pertinent material has since been transferred from storage to the Library of the Los Angeles County Medical Association. Doctor Edgar F. Mauer, the committee member from that city, has since made further examinations and reports that more discards could be made.

The writing of the early history is now being actively carried on by Doctor J. Roy Jones, and arrangements are being made to start its serial publication in CALIFORNIA MEDICINE after the middle of the year.

During 1956 CALIFORNIA MEDICINE has published the obituaries of 145 Association members, twenty-six of whom died in 1955. Among those departed were Lyell Kinney and Francis Hodges, both of whom had contributed generously of their time and talents to the Association's work.

Respectfully submitted,

J. MARION READ, *Chairman*

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Russian Surgeon Describes New Surgical Device

The first Russian-authored medical article to be submitted for American publication in many years appeared recently, describing a new mechanical device for connecting severed or damaged blood vessels.

Three papers by Prof. P. I. Androsov, M.D., of Moscow's Slivosovsky Institute and the U.S.S.R. Ministry of Health, appeared in a recent issue of *Archives of Surgery*, published by the American Medical Association.

The author said the device can be used for several important kinds of blood vessel surgery, offering a solution to the "vast problem" of restoring blood supply decreased or stopped by injury or disease. It also opens the way for "unlimited grafting" of various organ parts throughout the body, he said.

The device, designed by a team of Russian engineers and physicians including Prof. Androsov, has been heard of in the United States but few physicians here have had an opportunity to see it, according to Dr. Waltman Walters, Mayo Clinic, editor of the *Archives*.

He said the papers were submitted several months ago by Dr. Androsov to Major Paul Schafer, U. S. Army medical corps, who had seen Dr. Androsov perform surgery during a trip to Russia last year with Dr. F. Henry Ellis, Jr., of Rochester, Minn.

Dr. Ellis said that in recent years no Russian surgeon had sought publication of original work in surgical journals in this country.

The device utilizes tantalum metal clips, like staples, which fasten the doubled-over ends of the severed vessel. The instrument has numerous parts but can be disassembled easily in a short time, Prof. Androsov said. The great advantage of it, which "makes it within the reach of rank-and-file surgeons," is that only four parts have to be operated, he said.

One use is for connecting severed vessels in wounds, particularly bullet wounds. During World War II it is estimated that such connecting—called suturing—was used in only 0.8 per cent of wound cases. In the rest, severed vessels were simply tied off. Unfortunately this led to numerous complications, including gangrene. Suturing methods used prior to the mechanical device had many disadvantages, he said, including excessive length of time for operation, and the danger of repeat bleeding.

Prof. Androsov said the mechanical method makes possible "automatically faultless" connections.

So far the device has been used successfully 29 times for such cases. In one, a woman's wrist had been almost completely severed, held only by a small strip of skin. All blood supply was cut off. After blood vessels were sutured with the mechanical ap-

(Continued on Page 86)

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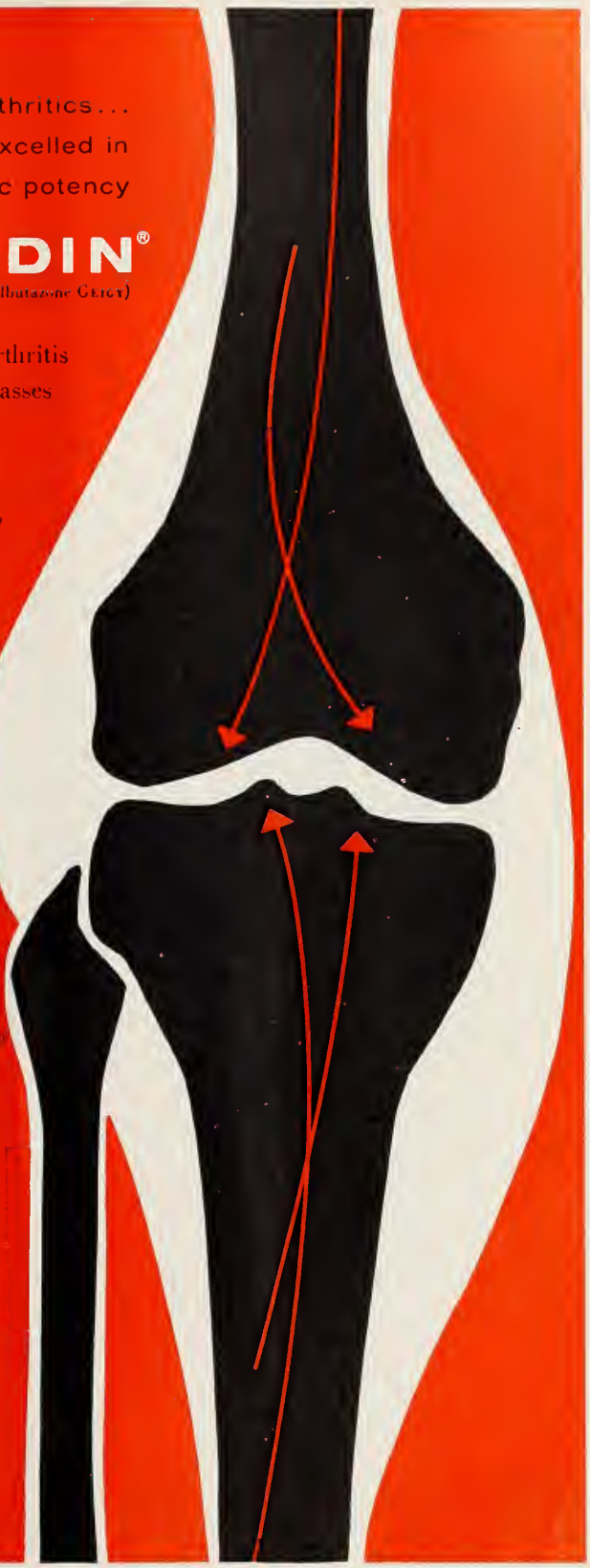

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Special Diet Effects Are Mainly Psychological

Eating red meat just before a football game may make a player think he's stronger and thereby improve his play, but it probably has little physical value, according to three Boston physicians.

If a player is regularly eating a well-balanced diet, special planning for his pre-event meal probably will not enhance his performance, Drs. Theodore B. Van Itallie, Leonardo Sinisterra and Fredrick J. Stare of the department of nutrition, Harvard School of Public Health, said.

Most of the value of training tables and such foods as rare meat and special desserts is psychological. In fact, their morale value is far greater than the nutrients they provide, the doctors said in a recent issue of the *Journal of the American Medical Association.*

The training table—as a type of ritual—helps provide some sense of security and reassurance to the athlete. Eating rare meat has always been a symbol of manly vigor and strength, but giving the athlete special food also serves another purpose: It helps make him feel that his training, which has required hard work and the foregoing of many pleasures, has some "incidental rewards."

In discussing the actual physiological effect of food, the authors noted that there is no evidence that performance in such short-term events as the 440-yard dash is improved by a special meal just before the event.

However, diet may have some effect on performance in longer events requiring sustained muscular work and endurance. In these there is a considerable drain upon the carbohydrate reserves of the body. Accordingly, the size of the reserves may affect endurance. In addition, some investigators believe that a small increase in muscular efficiency occurs when carbohydrate rather than fat is the predominant fuel for muscular work. Therefore, it seems desirable to give athletes participating in endurance contests diets that increase the carbohydrate reserves before the event, they said.

Since heavy work reduces carbohydrate stores, some persons believe that athletes should avoid heavy work during the last few days before a contest to allow a reserve supply to be built.

The doctors also noted that the trained athlete needs no extra protein, except during periods of "rigorous training." Then liberal quantities of protein should be included in the diet in order to allow muscles to increase in size without depriving other parts of the body of the necessary protein. Supplementary vitamins "probably aren't needed" if the athlete is consuming a nutritious diet, they said.

Actually the best diet for an athlete is one that he enjoys and one that provides a variety of nutri-

tious foods in amounts adequate to maintain his proper weight.

They warned that the athlete's weight should not be judged on the basis of conventional height-weight charts. Many athletes appear to be overweight for their height, when actually they have a low proportion of fat and a high proportion of lean but heavy muscle.

The meal immediately before the contest should be one that the athlete picks himself, the authors said. Emotional stress may cause loss of appetite and even nausea, and the athlete knows from experience which foods he can eat without discomfort.

Laryngoscope Used to Study Singer's Range

The laryngoscope, an instrument which doctors have used for more than a century to examine the larynx or voice box, has apparently found a useful place in the field of music.

A New York voice and speech teacher reports in one of the recent American Medical Association publications that he can use the instrument to great advantage to learn what type of voice a singer has before lessons begin.

William A. C. Zerffi, a member of the faculty of the New School for Social Research, said voice identification is usually left to the teacher's judgment. But because of bad singing habits or because of the human ability to imitate various sounds, a voice is sometimes misidentified. This can lead to improper training, bad singing habits, or even the shortening of a singer's career.

However, these difficulties easily can be avoided by using the laryngoscope. The teacher simply looks at the length of the vocal cords. The shorter the cords, the higher the voice; thus a soprano has shorter cords than a contralto and a tenor has shorter cords than a bass, Zerffi explained.

The laryngoscope also offers the teacher an opportunity to see just how the vocal cords function, which will help him in his teaching, Zerffi said in a recent issue of the *Archives of Otolaryngology*.

It's important that a singer be taught to sing within his natural range since only within that range can he sing easily and without exerting physical force. When he tries to sing in a higher or lower range, he must exert muscular force to the cords, and it's "little short of criminal to apply such force to so delicate a mechanism," he said. Continued forcing eventually injures the cords and shortens the singer's career.

Relying on sheer force to produce tones also has another drawback: It makes it difficult for the singer to sing both the notes and the character, Zerffi said. In other words, he's so busy forcing out the notes, he loses all dramatic or artistic expression.

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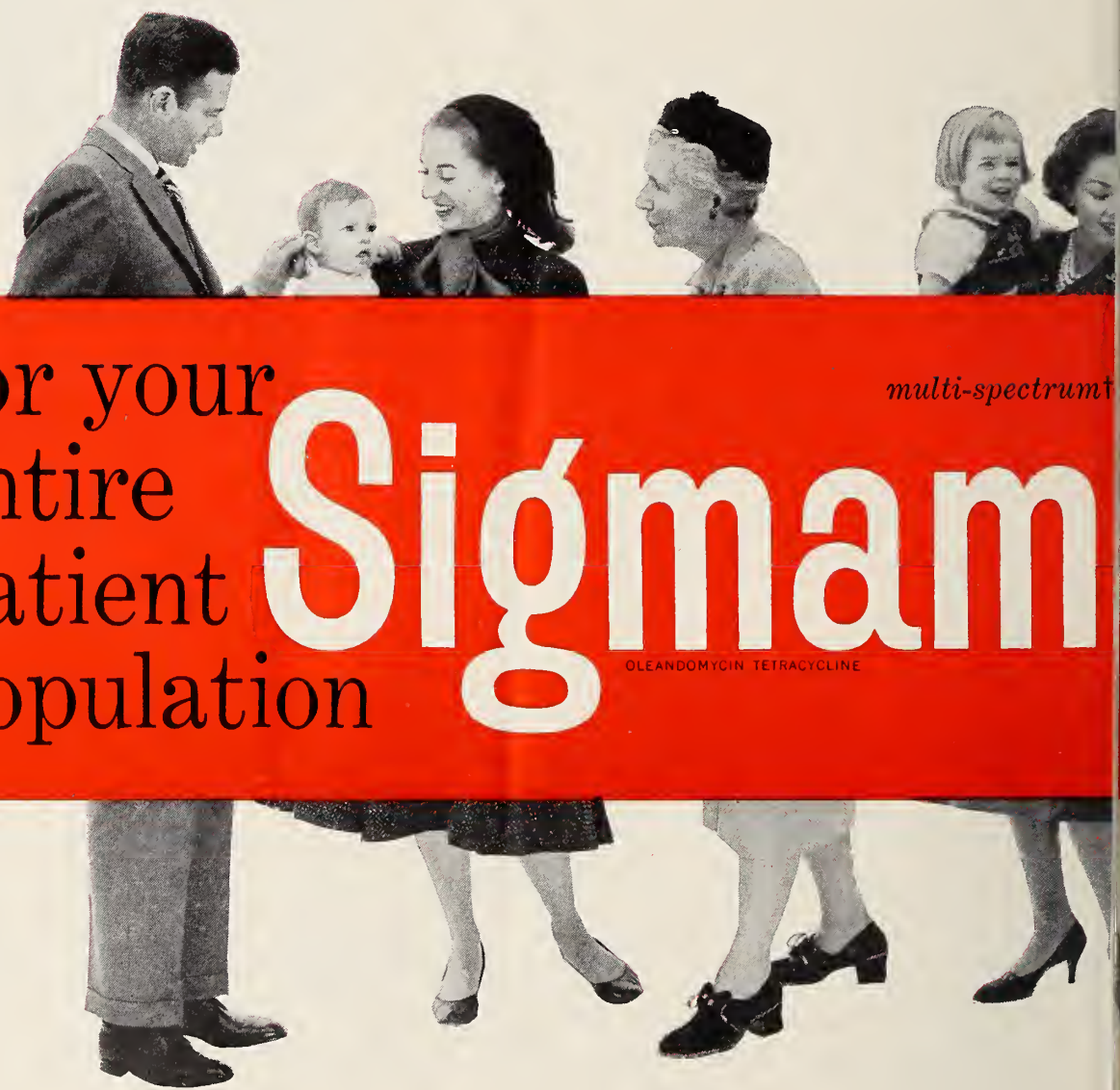

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ANOTHER Riker FIRST

Russian Surgeon Describes New Surgical Device

(Continued from Page 62)

paratus, and the bone and tendons were connected, the woman recovered complete use of her hand and wrist.

Another use of the device is in making an artificial esophagus out of a section of the small intestine. This may be necessary in cases of severe burning by lye or other caustic substances, or because of cancer of the esophagus.

Previously this method of substitution for an esophagus was not very successful because of the difficulty of severing the intestine from its natural network of tiny blood vessels in order to move it up to connect with the throat. This left the artificially-created esophagus without sufficient blood supply.

Using the new apparatus, blood vessels could be connected to the intestinal section used as a substitute, keeping it alive and supplied with blood.

This has been used on 11 patients, of whom all

(Continued on Page 90)

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Russian Surgeon Describes New Surgical Device

(Continued from Page 86)

recovered and only one was not considered successful.

Dr. Androsov's third report told how the apparatus is used in surgery for aneurysms, or balloon-like swellings in weakened sections of a blood vessel. This condition often presents great difficulties because the sac-like aneurysm itself may harden into the surrounding tissues, so that the section of vessel containing the aneurysm cannot be removed and replaced with a graft.

The apparatus makes it possible to connect a graft above and below the aneurysm, clamping off the aneurysm section and making a bypass with the graft. The aneurysm, no longer a part of the functioning blood vessel, can be left in place.

This technique also is useful when the aneurysm is in a position which makes it difficult for the surgeon to get at it.

Between 1940 and 1955 such operations were performed on 43 patients; in every case the vessel was restored to function, he said.

Campaign Against Accidental Poisoning

Medical and nonmedical people have banded together in a new all-out war against accidental poison-

(Continued on Page 94)

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Campaign Against Accidental Poisoning

(Continued from Page 90)

ing, which has killed some 15,000 Americans, including 5,000 children in the past decade.

The latest developments in the intensive campaign were outlined in a special article in a recent issue of the *Journal of the American Medical Association.*

Much progress has already been made in the fight to reduce accidental poisoning. Ten years ago it was estimated that every day over 850 persons became ill and six persons died from eating or drinking some poisonous agent. Today the rate is 425 nonfatal and three fatal cases of poisoning every day. This reduction has occurred in spite of a growing population and a growing number of new potentially harmful household items and drugs, mainly because of the intensive efforts of many medical and nonmedical groups.

Medicine's contribution has been the formation of poison control centers, which are set up in medical schools and hospitals as a source for emergency information. A doctor receiving a call about an accidental poisoning can contact the center, give the name of the poisoning agent and find out if it is harmful and what treatment is necessary. Since November, 1953, when the first center was set up in Chicago, centers have been set up in 35 other United States cities.

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1. Pollack, B.: Geriatrics *11*:253 (June) 1956.

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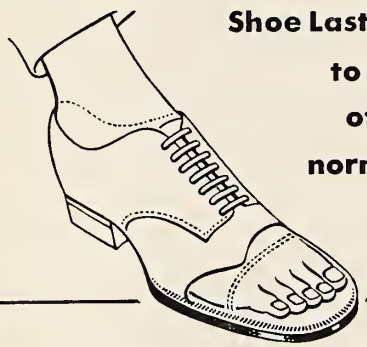

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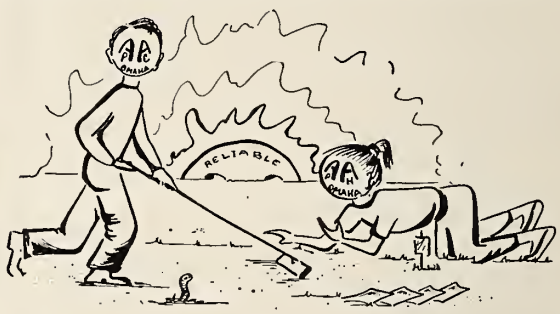

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San Bernardino County Medical Society, 615 D St., San Bernardino. Meets First Tuesday 8:00 p.m., San Bernardino County Charity Hospital.
Pres., Ben D. A. Miano, 1020 "D" St., San Bernardino.
Secy., Gordon Hodges, 1400 "D" St., San Bernardino.

San Diego County Medical Society, 3427 - 4th Ave., San Diego 3. Meets Second Tuesday, Mission Valley Country Club, 950 West Camino Del Rio.
Pres., James MacLaggan, 525 Hawthorn St., San Diego 1.
Secy., James I. Knott, 3712 30th St., San Diego 4.

San Francisco Medical Society, 250 Mosonic Ave., San Francisco 18. Meets Second Tuesday, 8:15 p.m., 250 Masonic Ave., San Francisco 18.
Pres., Donald M. Campbell, 250 Masonic Ave., San Francisco 18.
Secy., Roberta Fenlon, 250 Mosonic Ave., San Francisco 18.

San Joaquin County Medical Society. Meets First Thursday, 8:15 p.m., 936 N. Commerce St., Stockton.
Pres., James J. Heffernan, 1003 Medico-Dental Bldg., Stockton.
Secy., F. A. McGuire, 307 Medico-Dental Bldg., Stockton.

San Luis Obispa County Medical Society. Meets Third Saturday, 7:00 p.m., Anderson Hotel, San Luis Obispo.
Pres., Albert Gazin, 743 Pismo St., San Luis Obispo.
Secy., Anthony V. Keese, 990 Pacific, San Luis Obispo.

San Matea County Medical Society, 122 Second Ave., San Moteo. Meets Third Tuesday.
Pres., Henry A. Brown, 77 N. San Matea Dr., San Moteo.
Secy., William H. Thompson, 1515 Trousdale Dr., Burlingame.

Santa Barbara Caunty Medical Society, 300 West Pueblo St., Santa Barbara. Meets Second Monday, Cottage Hospital.
Pres., Douglas F. McDowell, 317 W. Pueblo St., Santa Barbara.
Secy., Robert I. Cord, 300 W. Pueblo St., Santa Barbara.

Santa Clara County Medical Society, 1024 The Alameda, San Jose 26. Meets Third Monday except in July and August.
Pres., Thomas N. Foster, 630 E. Santa Clara St., San Jose.
Secy., Carl O. Carlson, 660 E. Santa Clara St., San Jose.

Santa Cruz County Medical Society. Meets every Second Month, Second Tuesday. Time, place to be announced.
Pres., James Spencer, 135 Monte Vista, Watsonville.
Secy., William Cress, 526 Soquel Ave., Santa Cruz.

Shasta County Medical Society. Meets First Monday.
Pres., Paul B. Stratte, 2005 Court St., Redding.
Secy., Roland R. Jantzen, 1726 Market St., Redding.

Siskiyou County Medical Society. Meets Sunday on call.
Pres., Isaac Spomer, Box 398, Tulelake.
Secy., R. W. Bayuk, 750 South Main Street, Yreka.

Salano County Medical Society. Meets Second Tuesday, 8:00 p.m., at different meeting places.
Pres., O. S. Nesting, 841 Georgia, Vallejo.
Secy., Harle B. Grover, 327 Georgia, Vallejo.

Sonoma County Medical Society, 300 American Trust Bldg., Santa Rosa. Meets Second Thursday.
Pres., Walter E. Weber, Room 304, American Trust Bldg., Santa Rosa.
Secy., Clayton B. Taylor, Room 304, American Trust Bldg., Santa Rosa.

Stanislaus County Medical Society, 702 - 18th St., Modesto. Meets Third Tuesday of the month, 7 p.m., Hotel Covell, Modesto.
Pres., Guerne W. DeLappe, 301 Downey Ave., Modesto.
Secy., Robert W. Purvis, 709 18th St., Modesto.

Tehama County Medical Society. Meets at call of President.
Pres., G. W. Ingle, 304 Solano St., Corning.
Secy., L. Wolfe, 75 Belle Mill Rd., Red Bluff.

Tulare County Medical Society.
Pres., Cyril H. Johnson, 795 Cherry Ave., Tulare.
Secy., Victor A. Badertscher, 499 North L St., Dinuba.

Ventura County Medical Society. Meets Second Tuesday, 7:15 p.m., Colonial House, Oxnard.
Pres., Joseph F. Maguire, 2755 Loma Visto Rd., Ventura.
Secy., F. K. Helbling, 34 N. Ash St., Ventura.

Yolo County Medical Society. Meets First Wednesday.
Pres., Ernie A. Young, 1st and Main Sts., Winters.
Secy., James A. Kennedy, 218 F St., Davis.

Yuba-Sutter-Colusa County Medical Society. Meets Second Tuesday.
Pres., Rocco A. Montano, 316 G St., Marysville.
Secy., Robert I. Hodgin, Box 749, Marysville.

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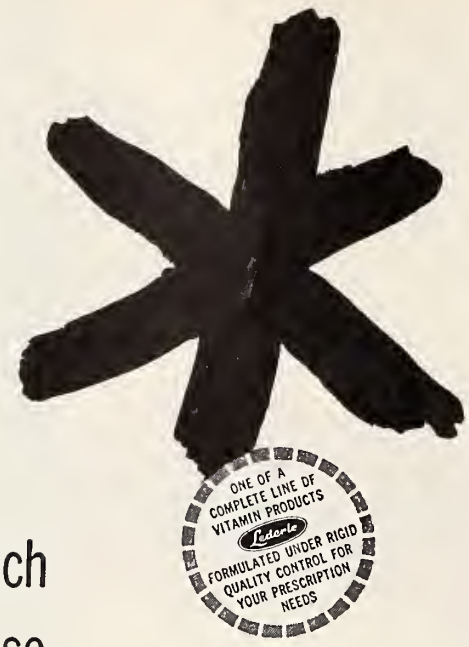

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Psychiatrist Debunks Popular Ideas About Alcoholics

An Omaha psychiatrist recently debunked some popular theories on how and what an individual must drink to be diagnosed as an alcoholic.

Writing in a recent issue of the *Journal of the American Medical Association*, Dr. Jackson A. Smith said some people think that a man who drinks a quart of whiskey a day but never drinks when alone, or one who routinely consumes twelve bottles of beer a day although never whiskey isn't a "real" alcoholic.

The fact that a man never drinks alone, or drinks only beer, has nothing to do with the severity of alcoholism. Also, to be a chronic alcoholic it is not necessary for a man to have delirium tremens or to become obviously intoxicated.

Neither can alcoholism be diagnosed by the clock. It is not necessary for an individual to start drinking in the morning, before lunch, or before 5 p.m. to be an alcoholic; although as the illness progresses, the hour at which the first drink is taken may be earlier in the day.

An alcoholic is any person "who relies on alcohol to meet the ordinary demands of living and continues to drink excessively after alcohol has caused him marital or occupational difficulty," Dr. Smith said. He is an alcoholic whether he drinks only in the evening, has never taken a drink when alone, or has not touched anything but beer for five years.

Dr. Smith made his comments in a special article on the psychiatric treatment of alcoholism, one of a series prepared by the committee on alcoholism of the A.M.A. Council on Mental Health to help general practitioners treat the disease. Dr. Smith is on the staff of the Nebraska Psychiatric Institute and the University of Nebraska College of Medicine.

In treating an alcoholic, the question is not only what or how the man drinks, but also why. Two problems must be met: The effects of the alcohol, and the underlying forces producing anxiety, which in turn causes the man to drink, Dr. Smith said. The majority of chronic alcoholics have an unusual amount of anxiety or tension that they attempt to control by drinking. This anxiety, which probably springs from an inability to express anger or resentment, is experienced as a feeling of fear, dread, or apprehension that may amount to panic.

Dr. Smith pointed out that physical effects of alcohol are more easily treated, and tend to be self-limiting if alcohol is withheld. However, unless the underlying problems are relieved, the drinking will be resumed as the anxiety recurs and increases in intensity.

Basically, the aim of psychotherapy is an attempt to encourage the patient to express anger, and thus to prevent its accumulating and leading to increased tension, anxiety, and another drinking bout, Dr. Smith said.

(Continued on Page 14)

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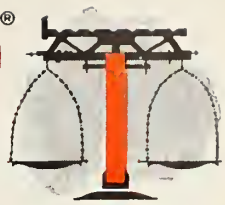

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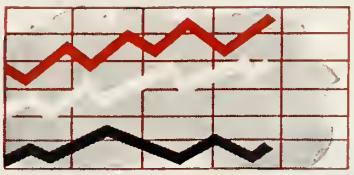

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Psychiatrist Debunks Popular Ideas About Alcoholics

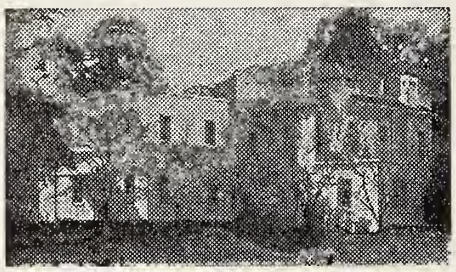
(Continued from Page 10)

The first step is for the patient to accept the diagnosis and the need for treatment—he cannot be "deceived into sobriety." For psychotherapy to be successful, the patient must personally conclude that for him drinking is impossible. He cannot abstain in order to humor his unduly alarmed wife, to placate an irate employer, or for any reason other than an actual understanding of the inevitable consequence of taking one drink. He must realize that there can be no compromise: He must be either a teetotaler or a drunk, Dr. Smith said.

In approaching the alcoholic patient, the doctor must remember that "the patient will inevitably minimize the amount he drinks, the trouble it has caused him, and the fears he feels about existing without alcohol. The family will be understandably reluctant to allow him to assume responsibility for himself; however, if the family hides a bottle from the patient, he is undoubtedly successfully hiding a bottle from them."

As a group, alcoholics respond very poorly to coercion, restriction, or threats. Lecturing or moralizing is rarely of any benefit, he said. The treatment must fit the individual alcoholic and not the diag-

(Continued on Page 26)



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Prednisolone-Hydroxyzine Combination [ATARAXOID] in Rheumatoid Arthritis

(excerpted from J. M. Soc. New Jersey 54:7, 1957)

PETER J. WARTER, M.D., *Trenton*

Dr. Warter concludes: "The effect of prednisolone on rheumatoid arthritis is enhanced by hydroxyzine, in many instances permitting a substantial reduction in the dosage of steroid . . . of 25 to 50 per cent."

* * *

The intimate correlation between anxiety states and rheumatoid exacerbations suggests that an ataractic agent might potentiate the action of steroids, or provide effective therapy for the emotional components of rheumatoid arthritis. . . . Accordingly, a study was developed to test the idea that combined steroid-ataraxic therapy [ATARAXOID] might be superior to therapy with steroids alone.

* * *

MATERIALS AND METHODS

A total of 6 men and 15 women were available for study. All but one had received steroids previously for rheumatoid arthritis. . . . All patients were started on a dosage of prednisolone equivalent to the amount of steroid they had formerly received: in most cases this was 15 or 20 milligrams of prednisolone daily, in divided doses. In addition, all patients received hydroxyzine [as ATARAXOID]

* * *

RESULTS

Of the 21 patients who completed the trial, it was possible in 12 to reduce the daily dosage of prednisolone when hydroxyzine was given concurrently. Two patients who had been receiving 15 milligrams of prednisolone were maintained on 5 milligrams when the steroid was supplemented by 10 milligrams of hydroxyzine. In eight others who had been receiving 10 to 15 milligrams of prednisolone, it was possible to reduce the steroid dosage by 5 or 7.5 milligrams. . . . Substantial clinical improvement was observed among most of the patients during this study, even among eight of those receiving reduced amounts of steroid. The table indicates the clinical status of the patients at the beginning of the study, and their evaluation after the period of therapy.

* * *

STATUS ON ATARAXOID

Patients	Previous Response Status	Steroid Dose	Clinical Response
1	Poor	R	Imp.
11	Fair	7-R 4-M	7-Imp. 1-Worse 3-N.C.
9	Good	4-R 5-M	6-Imp. 3-N.C.

R: Dose reduced / M: Dose maintained / Imp.: Clinically improved / N.C.: No clinical change.

Three had not been treated with steroids prior to this study. In four patients in the "Imp." group, the improvement was subjective or emotional only.

* * *

In general, the incidence and severity of adverse effects was lower on prednisolone-hydroxyzine therapy than on steroid therapy alone. . . . Therapy was discontinued in two patients because of side effects. In both these cases moderately large doses of steroids were involved.

* * *

SUMMARY

1. Ataraxoid (a combination of prednisolone and hydroxyzine) was used in the management of rheumatoid arthritis in patients whose response to steroids was well-known.

2. Using this combination it was possible to reduce substantially the maintenance dosage of prednisolone in 12 of 21 patients without sacrificing therapeutic effect in any case and with continued improvement in most of the patients.

3. Clinical improvement, reduction of steroid dosage, or both, was achieved in 18 of the 21 patients, and steroid side effects were generally diminished in intensity.

4. Therapy produced a tranquilizing effect in most patients that was not accompanied by drowsiness. In addition it was possible in many cases for the first time to gain the active cooperation of patients in the management of their disease.

This condensation has been prepared by the Medical Department of Pfizer Laboratories as a service to the Medical Profession.

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Still, with this virtual freedom from toxicity, ERYTHROCIN is effective in the great majority of common, bacterial respiratory infections. In speaking of pneumonia, Herrell said, *"the lack of toxic manifestations following administration of erythromycin today actually favors its use over that of the broad-spectrum antibiotics in the treatment of this infection."*[1]

While discussing purulent cellulitis and sepsis due to staphylococci, Eastman, et al., mentioned erythromycin as a *drug of first choice in treating these conditions.*[2]

Meanwhile, Solomon and Johnston stated, *"in the staphylococcic and streptococcic infections, other than pneumonias, without exception the results of treatment with erythromycin were excellent."*[3]

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1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 34, New York, Medical Encyclopedia Inc., 1955. **2.** Eastman, G., Cook, E. and Bunn, P., N. Y. State J. Med., 56:241, 1956. **3.** Solomon, S. and Johnston, B., Amer. J. Med. Sc., 230:660, 1955.

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Simple Treatment for Dislocated Shoulder

A simple method for treating a dislocated shoulder, involving a sand bag, two five-pound weights, a mild pain reliever, and the patient's ability to relax, was described recently by two Ohio physicians.

They outlined their method, a modification of a technique developed 50 years ago but rarely used since then, in a recent issue of the *Journal of the American Medical Association.*

Drs. William S. Smith and Thomas J. Klug of the division of orthopedic surgery, Ohio State University College of Medicine, Columbus, said that correction of an anterior dislocation of the shoulder (in which the shoulder is pushed forward and the arm backward) is frequently regarded as a hospital procedure requiring general anesthesia.

Their method, which they have used successfully in about 75 per cent of 30 consecutive cases, can be used in a doctor's office without general anesthesia.

Its success is based primarily on good muscle relaxation, they said.

The patient is given a mild pain-relieving drug, which also produces drowsiness and relaxation. When he is relaxed, he is placed face down on a table with the involved arm suspended over the side of the table. A sandbag is placed under the shoulder and two five-pound weights are attached to the forearm. If their pressure does not cause the shoulder to move back into place within five minutes, a gentle pendulum movement of the arm may help.

If good relaxation has been obtained, the procedure should be done in 10 minutes; if the dislocation is not corrected within 15 minutes, a general anesthetic should be given and a conventional method used, they said.

Proposed Treatment For "MS" Found Useless

Previous indications that a vitamin-B-like synthetic drug might help multiple sclerosis patients were unfounded, further research has shown.

Two groups of researchers said recently that isoniazid, used successfully against tuberculosis, has little effect on the course of multiple sclerosis over long periods.

MS, as it is sometimes called, is a disease of unknown cause which attacks the nervous system, resulting in weakness, incoordination, jerking of limbs and other symptoms. No cure is known. Two reports on attempts to treat MS by isoniazid appeared in a recent issue of the *Journal of the American Medical Association.*

Two years ago, Drs. John T. Kurtzke and Louis Berlin, White Plains, New York, reported striking improvement in hospitalized patients given isoniazid for less than three months. Since then they have conducted tests on more patients for longer periods. They reported recently that isoniazid resulted in about the same improvement as would be expected without any treatment. Patients still receiving isoniazid after discharge from the hospital had periods of worsening at about the same rate as those not getting it.

Another article in the issue reported a study in 11 Veterans Administration hospitals in which 186 patients with MS were studied for at least nine months. This study, stimulated by the original report of Drs. Kurtzke and Berlin, also showed that the drug had no effect on MS.

The VA researchers were headed by Dr. Benedict Nagler of the VA central office, Washington, D. C.

Human Tears Differ According to Cause

The composition of human tears differs according to the cause of the tears, a Los Angeles researcher stated.

Robert Brunish, Ph.D., said that tears caused by emotional stress contain appreciably more albumin than do tears produced by an irritant such as onion vapors.

Brunish used an electrical apparatus to study tears obtained from persons ranging in age from six months to 50 years. Age has no effect on the composition of the tears.

The amount of tears secreted during emotional disturbances was much greater than that caused by onion vapors, air pollutants, or tear gas. The flow of irritant-induced tears usually began profusely and then stopped abruptly.

Brunish said tears caused by emotional disturbances and those produced without known cause are believed to resemble closely the fluid normally covering the surface of the eye. He called these two types, "normal" tears.

At least three protein components have been identified in normal tears, Brunish said. These are albumin, lysozyme, and globulin. They are also in irritant-induced tears, but in different proportions.

More information about just how tears are formed might be gained, he said, by studying the proportions of proteins in tears produced by various causes. Such study might help explain what glands are involved in tear production and what role the nervous system plays.

Brunish, who is a member of the department of physiological chemistry at the University of California Medical Center, made his report in the American Medical Association's *Archives of Ophthalmology.*

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Psychiatrist Debunks Popular Ideas About Alcoholics

(Continued from Page 14)

nosis alone. The patient must be allowed to do the talking so that he can clarify and explain the reasons he offers himself for drinking. This also allows the doctor to learn why, rather than what or how much, he drinks.

Most important for the success of treatment is the patient's cooperation and understanding of his problem and treatment, Dr. Smith said. Getting the complete cooperation of the patient is not as simple as it might seem. The patient may find the diagnosis of chronic alcoholism totally unacceptable and frightening. It's up to the doctor to make the diagnosis as acceptable as possible.

C.M.A. Annual Session Registration

Registration and information desks are located at the back of the Ballroom, Casino Floor. *All members, guests, and visitors are requested to register immediately on arrival.* There is no charge for registration. Registration desks are open Sunday, Monday, Tuesday, from 9:00 a.m. to 5:00 p.m., and Wednesday, 9:00 a.m. to noon.

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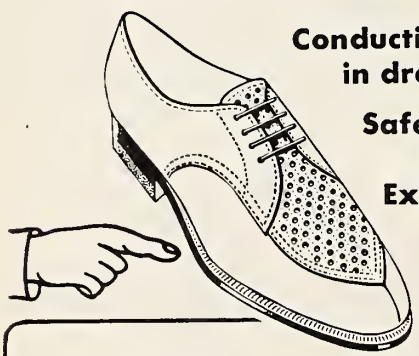

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FDA Announcements

Drug and pharmaceutical firms have been warned by Food and Drug Administration against indiscriminate distribution of physicians' drug samples. FDA noted: "At several professional meetings potent prescription drugs were freely distributed to non-physicians who happened to stop at the . . . exhibits." . . . Advising distributors to remove stem-type and wing-type intracervical and intrauterine pessaries from the market, FDA pointed out that these are "dangerous to health and . . . may be shown to be misbranded." . . . Minimum adult daily requirement for niacin has been set by FDA at 10 milligrams and minimum requirement for riboflavin reduced to one milligram daily.

—A.M.A. Washington Letter

C.M.A. Annual Session—Emergency Calls and Messages

Each physician should notify his own secretary regarding the exact section he plans to attend and the time of his attendance. It is up to the individual physician to keep his own office staff so informed. The Association will *attempt* to transmit messages to the individual physician.

In case of emergency, when the doctor cannot be located, the call will be referred to Emergency Call Service of the Los Angeles County Medical Association, DUnkirk 5-1581.

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CANRIGHT'S Comments

by
E. H. CANRIGHT
President
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We have some introductions that are in order. Some months ago, our Northern California District Manager, Mr. C. U. (Kelly) Striblen, secured the services of Mr. Fred W. Wildenberg to represent us in the Modesto-Fresno territory.

More recently, three additions have been made to our Southern California staff.

Mr. C. R. (Bob) Boehrig now covers the Long Beach-Orange County district.

Mr. Ralph B. Clark is the Canright representative in the Inglewood-Huntington Park territory.

Mr. Glen F. Herbert is "Canright" in the Glendale-San Fernando Valley area.

The new Southern fellows were introduced in their territories by our San Bernardino-Riverside Counties representative, Mr. G. Harold Boehrig.

Personally, I feel very lucky to have the caliber of representative the Canright Corporation enjoys. Speaking of luck—Sam in the cornpatch, when asked what luck he was having, said: "I seem to have the best luck with the rows I hoes the most," so it seems with everything —the things we "hoes" the most, are the most successful.

As for us, our cornpatch is prescription specialties, and with your indulgence we will continue our hoeing in your medical journals, your medical meetings, and with your permission, in your offices.

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Transfusion Refusal Creates Problems for Doctor

What should a physician do when a patient refuses a life-saving blood transfusion?

This problem doesn't arise often, and usually results from a patient's religious beliefs. But when it does occur, the doctor is caught between two principles: His medical training demands that he do all he can to save life; but the patient has a right to reject these life-saving efforts.

An article in a recent issue of the *Journal of the American Medical Association* pointed out that society does not demand that a person accept surgery or medical advice, or even seek medical care at all. It only demands that a person undergo medical procedures when refusal to do so might harm others. For instance, a Washington court ruled that a state college student must have a chest x-ray because failure to do so might conceal tuberculosis and thereby endanger the health of other students.

But this doesn't answer the question for the doctor whose patient refuses a necessary blood transfusion.

Actually the doctor has three choices. He can refuse to treat the patient. He can subjugate his own beliefs to the patient's wishes. Or he can give the blood transfusion and expose himself to possible legal action.

The article said the doctor can refuse to treat the patient at all, so long as he advises the patient of his intention and gives him the opportunity to find another doctor.

If it is an emergency situation and the doctor cannot withdraw without danger to the patient, then he is legally obligated to respect the patient's demands, the article said. However, it warned that the doctor should "proceed with caution" when he is not certain that the patient is in full possession of his faculties or that a relative has authority to speak for the patient. Then the doctor should make certain that the request is put in writing and signed or is witnessed.

If the doctor accepts responsibility for the patient and finds that a transfusion is necessary, he can go ahead and give it, although it is possible that the person might later sue him for assault.

When the patient is a child and the parents reject a transfusion, the legal position of the doctor is not too clear, the article said. In a nonemergency situation, he may, of course, refuse the case.

If it is impossible for the doctor to withdraw, it seems that he is obligated to respect the parents' demands to the greatest extent possible, but he may still be faced during the procedure with a decision on his own, according to his judgment and conscience, it said.

The demand of the parent may well be the wish of the child-patient; perhaps the patient might choose to die rather than violate a religious principle. How-

(Continued on Page 38)

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Transfusion Refusal Creates Problems for Doctor

(Continued from Page 34)

ever, the doctor has no way of telling that this is really the child's belief.

If the doctor does give the child a transfusion, contrary to the parent's wish, the child might express gratitude upon recovery. It is also possible that the child through his parents might sue the doctor for assault. If the charge of assault were upheld, the damage would have to take into account the saving of the child's life, and it is doubtful that any more than nominal damages would be awarded for such an assault, the article said.

It suggested that in such cases the doctor seek advice from the local prosecuting attorney and child welfare agencies as to whether the court should appoint a guardian for the child.

C.M.A. ANNUAL SESSION

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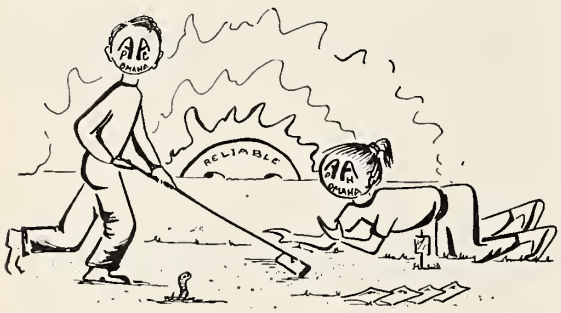

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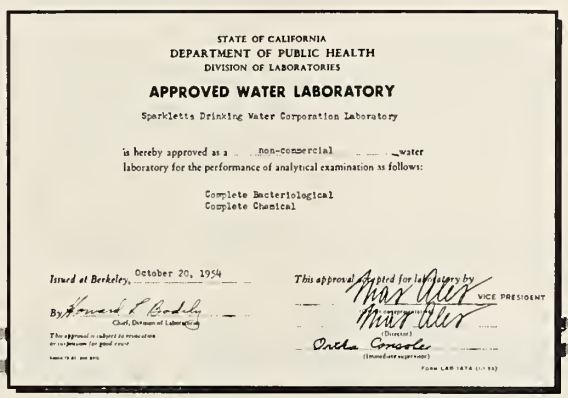

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Uses of Colored Glass

Colored glasses are among modern technology's most beautiful products, but their anticipated uses have not always been successful, according to an editorial in a recent issue of the *Journal of the American Medical Association.*

Use of colored filters has reached "a climax of complexity and magnificence" in color photography and television, the editorial said. Any desired color can be had in any desired degree of purity and filters for every imaginable purpose are elaborately catalogued. Students can repeat "with more striking effect than ever" the classic experiments in light and color.

But colored glass has still proved unsuccessful in some cases. It causes difficulties for drivers since colored lenses impair a driver's ability to discriminate colors. It simply doesn't work for snow goggles.

The suggestion that colored windshields were to be placed in five million cars brought "howls of anguish from owners of drive-in theaters," because the supposedly glare-resistant windshields were blurring black-and-white motion pictures, making Technicolor unrecognizable and spoiling three-dimensional effects, the editorial said. It added that tinted lenses similarly interfere with the enjoyment of colored television.

(Continued on Page 46)

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Uses of Colored Glass

(Continued from Page 42)

A recent study of snow goggles showed that colored glass—even red glass of extreme purity—is no more effective in helping a person see in the snow than neutral glasses designed to reduce the over-all brightness of transmitted light without imparting any one color.

The best method for distinguishing cracks, holes and humps in a snow field during an "arctic white-out" are still the Eskimo's "peephole specs," pieces of opaque substances in which tiny peepholes are cut.

These work like a pinhole camera, which is familiar to physics students as presenting a dilemma: The smaller the pinhole, the sharper the focus, but the dimmer the image.

Neutral glasses are useful in many situations, but "no commercially marketed sunglass is sufficiently dense to permit direct gaze at the sun," the editorial warned. This warning has to be repeated whenever an eclipse of the sun is predicted, the editorial said. Fifteen cases of retinal burns were reported by two French doctors after a 1955 eclipse and 36 cases in India after one in 1956.

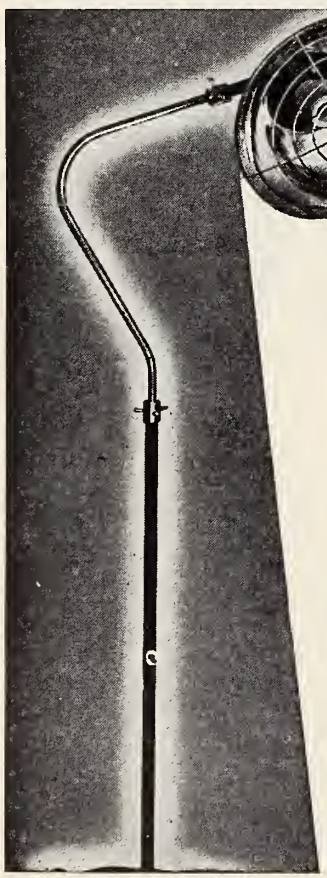
California Medical Association

1957 Annual Session

AMBASSADOR HOTEL
LOS ANGELES

April 28 - May 1, 1957

Registration daily, 9 a.m. to 5 p.m., except Wednesday, May 1, 9 a.m. to noon
NO REGISTRATION FEE



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Hearing Aid Modified For Use in Surgery

The transistor hearing aid has assumed a new, and sometimes livesaving, task: Monitoring the breathing of an unconscious surgical patient.

A Baltimore dentist and a physician described in a recent issue of the *Journal of the American Medical Association* how they adapted the hearing aid to its new use. They call their apparatus the Breathophone.

It consists of a hearing-aid transistor amplifier, a hearing-aid earphone that does not have to be worn in the ear, and a microphone that is removed from the hearing aid and placed within the anesthesia breathing apparatus.

Sylvan M. Shane, D.D.S., and Dr. Harry Ashman of the department of anesthesiology, Lutheran Hospital of Maryland, said that amplifying the breathing sounds is the most accurate way of checking an unconscious patient's respiration. If breath sounds are not audible, the only other way of checking is to watch the slight rise and fall of a rubber breathing bag.

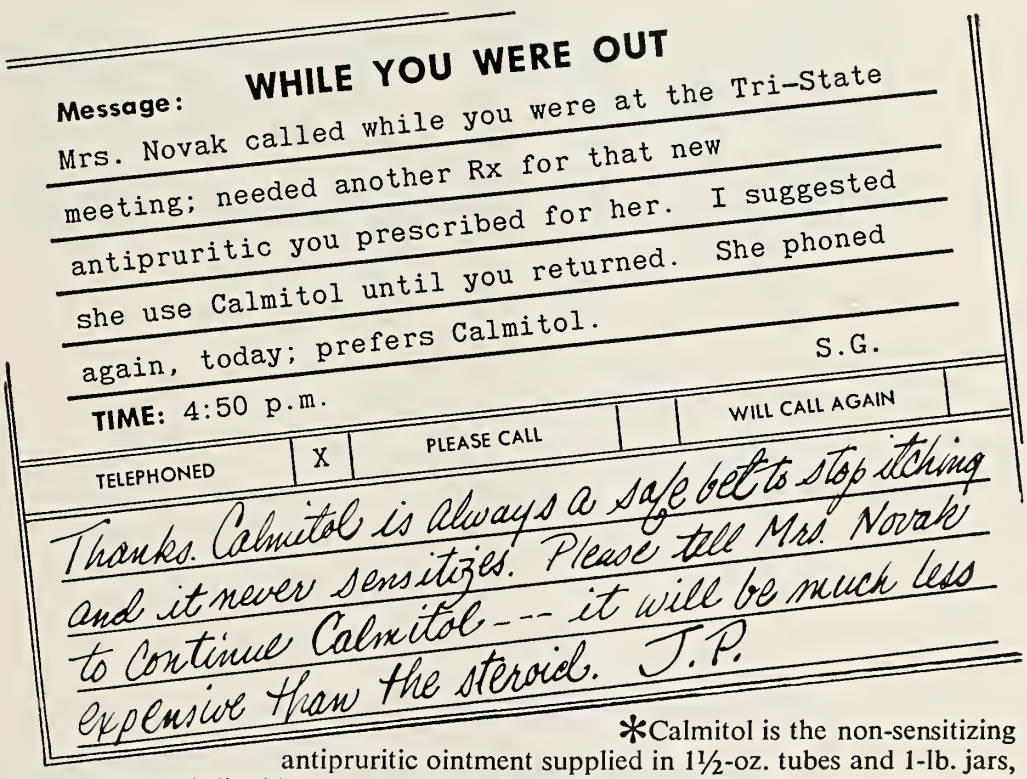
However, this is "fraught with inefficiency and danger," since it is almost impossile to look constantly at a moving breathing bag without eventual self-hypnosis, they said. In addition, a breathing bag gives no indication of a partial respiratory obstruction.

A microphone from a hearing aid is inserted into a cork and reconnected to the hearing aid amplifier by lengthening the original connecting wires. The cork is then put in a small T-tube which can be placed anywhere within the anesthesia breathing circuit.

The slightest breath causes the air within the T-tube to move and strike the microphone. The battery-operated hearing aid amplifier then magnifies the sound heard through the hearing-aid earphone. It isn't necessary to wear the earphone in the ear. It can be placed in a small open-mouthed jar or paper cup which acts as a loudspeaker, and the sounds can be heard by everyone in the operating room.

One advantage of the device is that it requires no contact with the patient. Two years ago the authors reported using a throat microphone that was attached to the patient's neck. But it proved impractical in neck surgery because it could be momentarily moved out of place.

The Breathophone has been of "inestimable value," especially in head, neck and pediatric surgery, providing "an additional and highly important safeguard" in the care of the unconscious patient, they concluded.



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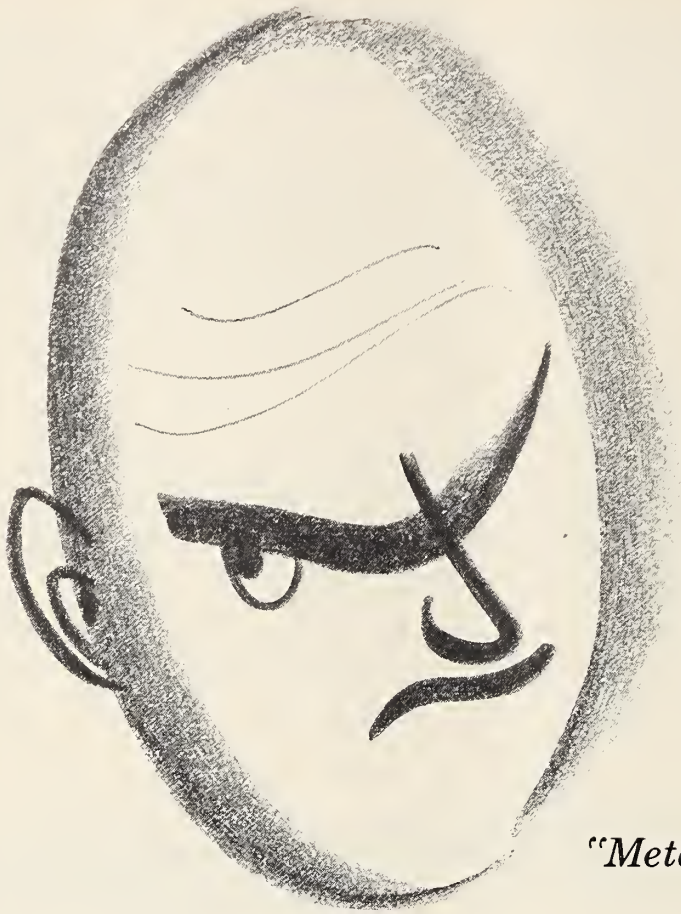
Each ounce contains: Hyoscyamine oleate (equivalent to 0.028 mg. hyoscyamine alkaloid), 0.055 mg.; Alcohol, 1.4 cc.; Camphor, 0.16 Gm.; Ether, 0.5 cc.; Chloroform, 0.19 cc.; Chloral hydrate, 0.13 Gm.; Menthol, 0.17 Gm.; in a suitable ointment base.



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Physician Calls "Cult of Manliness" Suicidal

The medical director of a large industrial firm recently blamed the "suicidal cult of manliness" for the "rat race" in which many American men find themselves.

Writing in the American Medical Association's *Today's Health*, Dr. Lemuel C. McGee, Wilmington, Delaware, said the average lifetime of men is about four years less than that of women, mainly because of the stress under which men live.

The use of a "little common sense" could eliminate many of the tensions and stresses, providing a healthier and longer life for most people, he said.

"The American male has been indoctrinated with the philosophy that he must live, work and play at a dizzy pace, that he can and should wade through all emotional and physical situations without flinching and without reflection," Dr. McGee said.

Every man and boy must live within his own resources of physical and mental strength, but many fail to do so because of the cult of manliness. They drive themselves to the point of exhaustion in work, play, social activities or a combination of these. This could be avoided by reasonable attention to the use of spare time and intelligent effort at recreation, he said.

(Continued on Page 62)

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Physician Calls "Cult of Manliness" Suicidal

(Continued from Page 56)

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Dr. McGee is medical director of Hercules Powder Company.

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Preoperative Pulmonary Evaluation

As Viewed by the Internist

THEODORE L. BADGER, *M.D.*, Boston

• **The internist as well as the surgeon finds thorough pulmonary functional evaluation of the patient for operation an invaluable adjunct to strictly clinical judgment in two large categories of patients: Those with significant inconsistencies between clinical impression and functional analysis of pulmonary reserve as well as in those with borderline functional reserve where operation is imperative.**

PREOPERATIVE PULMONARY EVALUATION for appraisal of surgical risk may require more careful analysis than a clinical impression. It need hardly be mentioned that evaluation of the patient for elective operation is quite different from evaluation for emergency intervention. In emergency, time is a factor that cannot be neglected. The preoperative revelations of a chest x-ray in addition to the stethoscope, the electrocardiographic contributions to auscultation of the heart, a urine examination, hematocrit determination and examination of a specimen of blood, blood grouping and determination of nonprotein nitrogen, sugar content and carbon dioxide combining power may be all one needs to be prepared to cope with most complications that may develop.

Emergency operations upon the thorax and the thoracic organs are rather uncommon except following severe trauma. Most emergency thoracic procedures come at a time when function has already been seriously impaired and operation must be expected to improve rather than diminish function further. This is true in patients with ruptured emphysematous blebs and tension pneumothorax; it is true in cases of chest trauma, in patients with rupture of the esophagus; and it is true even when operation is done to stop bleeding. In such cases the patient has already survived a severe trial of pulmonary insufficiency and in these situations operation can be performed even if objectively evaluated pulmonary reserve proves to be well below the acceptable minimum of reserve ordinarily required for transthoracic operation.

This communication is concerned with pulmonary evaluation for elective operations, principally to screen out patients unfit for operation because of pulmonary insufficiency. It should be clearly stated, however, that this evaluation of pulmonary reserve reflects the thoughts of an internist and chest physician, not those of a pulmonary physiologist. Its purpose is to depict the clinical usefulness of the findings of the pulmonary function laboratory. The de-

Assistant Clinical Professor of Medicine, Harvard Medical School.

Presented before the Sections on General Medicine and General Surgery at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

From the Thorndike Memorial Laboratory and the Second and Fourth (Harvard) Medical Services, Boston City Hospital, and the Department of Medicine, Harvard Medical School.

This study was supported in part by research grant (H1773) from the National Institutes of Health, Public Health Service, and the Committee on Medical Research, American Trudeau Society, Medical Section of the National Tuberculosis Association.

tailed pulmonary function studies in the cases here reported upon were done under the direction of Dr. Edward A. Gaensler with his associates, Dr. Asher Marks, Dr. Inga Lindgren, Dr. John B. Cadigan, Jr. and formerly Dr. David W. Cugell, in the Pulmonary Physiology Laboratories of the Boston Sanatorium and the Boston City Hospital. The usefulness of these studies to the internist, in his evaluation of surgical risk, is the purpose of this paper.

Clinical evaluation is an inseparable component of preoperative evaluation but objective physiologic studies have come to play an increasingly important part in one's judgment of pulmonary reserve.

PRELIMINARY SCREENING

Many times when a thoracic operation is contemplated, elaborate lung function studies are neither available nor necessary. Initial screening tests for pulmonary reserve can be those of the clinician in the examining room of his office or the hospital. It should be a function of the pulmonary physiology laboratory to contribute to the diagnostic acumen and the facilities of the clinician by the adaptation of function tests for office use. Use of the fluoroscope, with its view of the dynamic action of the heart, the lungs and the thorax, should supplement the history of symptoms and the physical examination, for it can contribute considerable accuracy in the estimation of pulmonary reserve. A searching history and complete physical examination are background data for careful surgeons. It is not always possible historically, to separate the symptoms of primary pulmonary origin from those secondary to cardiac disease, so closely interdependent are these two systems. The following symptomatic information may be revealing:

1. *Signs and Symptoms of Pulmonary Origin:*
   - Breathlessness (1 or 2 flights)
   - Cough (character)
   - Sputum (amount and character)
   - Hemoptysis without pleurisy
   - Wheezing
   - Previous chest plates
   - Dyspnea without orthopnea
   - Known pulmonary disease
   - Previous chest surgery
   - Asthma and other allergies
   - Chest pain (character)
   - Occupation, familial pulmonary disease.
2. *Signs and Symptoms of Cardiovascular Origin:*
   - Known cardiac disease
   - Rheumatic state
   - Family or personal embolic history
   - Orthopnea, precordial pain with effort
   - Paroxysmal nocturnal dyspnea
   - Peripheral and sacral edema
   - Previous electrocardiograms
   - Fatigue and limitation of activity
   - Palpitation and irregularities of cardiac origin.

Figure 1 (Case 1).—*Left:* Inspiration. *Right:* Expiration, with diaphragms equivalent to 4.5 cm. higher than on inspiration, smoother and more rounded. Not shown was the very slow movement of 9.0 seconds by fluoroscopy to acquire this degree of elevation.

Specific factual data from pulmonary observations should be added to this historical framework. A stethoscope, the use of which is understood, a tape measure, a flight of stairs, a watch, a skin pencil and a few x-ray films of the chest will enable the clinician to screen out the pulmonary sufficient from the insufficient. As adjuncts to keen clinical observation, the fluoroscope and a timed vital capacity machine for measuring breathing performance in volume per unit of time are the two most useful pieces of screening apparatus for the office. Roentgenologists are not accustomed to report the type of information that is useful to the clinician for the determination of obstructive and restrictive defects in breathing. Fluoroscopy by the clinician should be reserved primarily for observing the dynamic action of the thoracic organs within the chest, as well as their silhouettes. The x-ray examination of the lungs should be relied on only for the detection and analysis of parenchymal disease. Definitive x-ray observations should complement fluoroscopy and the physical examination. The following observations which have proved most essential for preliminary screening and evaluation of lung function are based upon my personal experience with 350 fluoroscopic examinations in the office:

Fluoroscopic Screening for Lung Function

1. Chest wall—expansion in diagonal view, marked and measured on screen in centimeters.
2. Heart and vessels—position, silhouette, pulsations.
3. Diaphragms:
   - (a) Position—at posterior ribs.
   - (b) Equality or differences in action.
   - (c) Maximum excursion—marked on screen and measured in centimeters.
   - (d) Speed of excursion—fast or slow—but timed for maximal rise.
4. Lungs:
   - (a) Comparative radiance.
   - (b) Abnormal shadows—fluid—free air.
   - (c) Trapping of air—unusual localized radiance at end of expiration and mediastinal motion.

The timed vital capacity machine devised by Gaensler[2] in our laboratories is a simple vital ca-

pacity machine with an electronic timing device for measuring the volume of air exhaled in the first, the first two or the first three seconds of the maximal expiratory effort in addition to the total vital capacity. Normal persons exhale 75 to 90 per cent of their total vital capacity in one second and 90 to 100 per cent in three seconds. Persons with obstructions to the flow of air out of the lungs may, for example, exhale only 25 to 60 per cent of their total vital capacity in the first second. On the contrary, persons with pulmonary fibrosis or other restrictive parenchymal lesions without airway obstruction and those with muscular weakness or paralysis or lack of "driving power" may have a reduced or restricted total vital capacity but may exhale a normal or greater than normal per cent of that volume in one second.

The following case is illustrative of the usefulness of these pulmonary screening examinations.

CASE 1. The patient was a 50-year-old administrator with a family history of four generations of severe shortness of breath consistent with emphysema. His own difficulties in breathing were of six years' duration, slowly and progressively becoming worse. He was a tall, well-built active man with dusky lips who was obviously short of breath at rest.

The results of office examination and functional evaluation were as follows:

Lungs: Hyper-resonant—clear—breath sounds faint.

Fluoroscopy: Chest expansion 1 cm.—radiant++.

Diaphragms: Twelfth rib—maximal excursion 4.5 cm. Paradoxical in motion at onset of inspiration and expiration—speed of expiration 9.0 seconds.

Heart: Small—pulmonary conus prominent

Vital Capacity: 4,200 cc., 100 per cent of predicted normal.

Timed Vital Capacity: 36 per cent of total vital capacity in 1 second.

Conclusion: Advanced pulmonary emphysema.

These findings, entirely consistent with advanced emphysema, were confirmed by more detailed study for specific problems of therapy.

The inspiratory and expiratory x-ray films of the chest (Figure 1) showed the low diaphragm with very little difference in the two positions. The x-ray silhouette showed a prominence of the pulmonary conus in the right anterior diagonal view, typical of cor pulmonale (Figure 2).

Thus, the history, the office examination, fluoroscopy and timed vital capacity gave a clear-cut picture of the severity of disease. Also illustrated was the well known fact that determination of the vital capacity alone is of little value. On the contrary, for preoperative evaluation, reliance on this "objective" test alone may lead to disastrous consequences. In this man with dyspnea at rest and far advanced

Figure 2 (Case 1).—Right anterior diagonal view of patient in Figure 1, showing considerable prominence of pulmonary conus, from increased pulmonary arterial pressure in advanced obstructive emphysema.

emphysema, the vital capacity was 100 per cent of normal.

It is not necessary to explore all techniques of preoperative pulmonary evaluation beyond these preliminary office screening procedures, but there are specific indications for special and thorough investigation of pulmonary reserve,[9] as follows:

Indications for Special Function Studies

1. Inconsistencies between the clinical impression and screening functional analysis of pulmonary reserve.[3]
2. Dyspnea not explained by x-ray films or routine function studies.
3. Borderline functional reserve where operation is imperative, requiring differential bronchospirometry.[4]

Doubts or inconsistencies between the clinical impression of pulmonary reserve and preliminary screening functional tests should be a sound criterion for more elaborate and definitive studies of pulmonary function. The type of operation anticipated may be modified not only by the degree of pulmonary insufficiency but by the infringement of specific surgical procedures upon existing pulmonary reserve.[9]

Dyspnea not explained by the x-ray or preliminary screening studies is seen largely in patients with diffuse pulmonary lesions of varying severity as observed by x-ray, yet have essentially normal results of ventilatory studies. The process, widely disseminated in the alveolar membranes in certain granulomatous and fibrotic diseases of the lungs, is such as to effect the diffusion of gases in the so-called "alveolar-capillary block" syndrome described by Cournand.[1]

This complicated subject is not under discussion here, chiefly because such patients usually have dif-

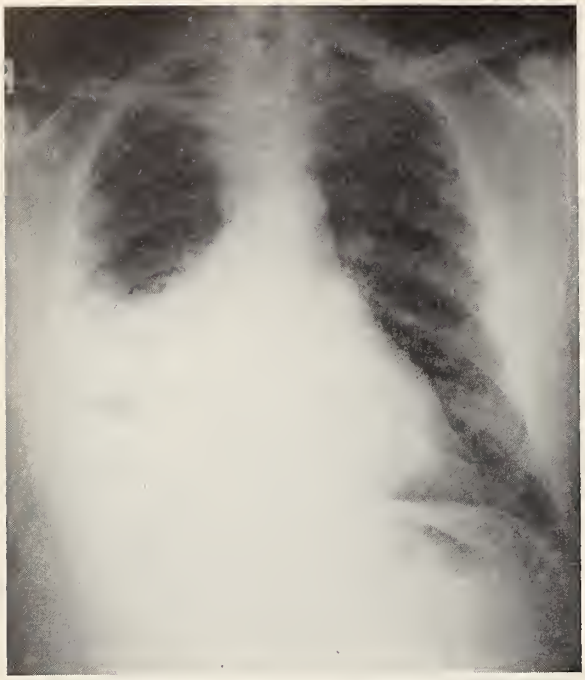

Figure 3 (Case 2).—Proved epidermoid carcinoma of right main stem bronchus. Left lung clear.

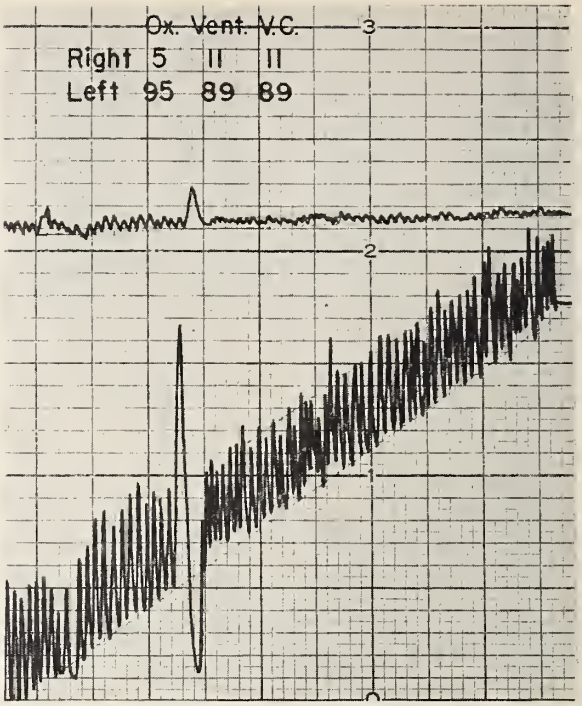

Figure 4 (Case 2).—Bronchospirometry shows almost complete dysfunction of the right lung (upper tracing) and normal function of the left. Prediction was satisfactory reserve on left to carry the whole load following right pneumonectomy. (Ox.=Oxygen uptake; Vent.=Ventilation; VC=Vital capacity—all expressed in per cent of total for both lungs.)

fuse rather than localized pulmonary disease and do not present surgical problems. Occasionally, a patient with old healed miliary tuberculosis and final localized disease may offer a problem with regard to oxygen transfer—in other words, may have an "alveolar-capillary block." Patients are occasionally referred to a thoracic surgeon for lung biopsy for definitive diagnosis or treatment on medicolegal problems. Severe "alveolar-capillary block" in these patients makes them a bad surgical risk for any intrathoracic procedure, including biopsy. This syndrome also offers a differential diagnostic problem in patients proposed for mitral valve operations who also have evidence of severe pulmonary infiltration. A few simple clinical findings which may point to the diagnosis of "alveolar-capillary block" may be mentioned here:

1. Evidence of diffuse miliary pulmonary infiltration on the x-ray film of the chest;
2. Normal maximal breathing and timed vital capacities;
3. Slightly to greatly reduced total vital capacity;
4. Respiratory alkalosis as evidenced by decreased carbon dioxide content and increased pH of the arterial blood; and, most important,
5. An increased dyspnea index or diminished breathing reserve due to increased ventilatory requirement rather than diminished breathing capacity.

Great discrepancies between the pulmonary function data and the patient's dyspnea are sometimes seen also in persons with neurocirculatory asthenia, in malingerers, and in persons with insurance claims.

Borderline functional reserve particularly deserves emphasis. Some thoracic surgeons still show a lack of interest—if not hostility—toward preoperative objective pulmonary functional evaluation. Some of them, discussing this subject, refer to an excellent operative record along with a low mortality rate due to pulmonary insufficiency as well as a low respiratory morbidity, as evidence in favor of clinical judgment only in the evaluation of surgical risks. Lacking, however, are data on the number and type of cases denied operation on the basis of clinical judgment only in estimating insufficient pulmonary reserve. On innumerable occasions Dr. Gaensler has carried out pulmonary function studies on patients of borderline risk who had been refused operation. It has been a matter of considerable interest that a number of them, after careful (and occasionally complex) testing, have been cleared for operation and have withstood the needed procedure without significant difficulty.

In considering inconsistencies between clinical impression and functional analysis of pulmonary reserve as well as borderline functional reserve when operation is imperative, the following cases are illustrative.

Case 2. The patient, a 59-year-old man with a proved epidermoid carcinoma of the right main

stem bronchus, had shortness of breath that had increased over an eight-month period and was out of proportion to other clinical observations. Right pneumonectomy was contemplated and it was imperative to know if the left lung could carry the respiratory burden alone, considering the degree of shortness of breath in the preliminary studies.

An x-ray film of the chest (Figure 3) showed the tumor mass in the right hilar region, supposedly some fluid (although none could be obtained) and a clear left lung.

Results of pulmonary ventilatory studies were:

	Predicted	Determined	Per Cent of Predicted
Maximal breathing capacity (liters per minute)	124	53	42
Vital capacity, cubic centimeters	3,995	2,100	52
One minute timed vital capacity, per cent of total	75	75	100
Air velocity index	1.0	0.80	....
Walking dyspnea index, per cent	15	45	....

The maximum breathing capacity was greatly reduced, but only slightly more than the vital capacity in per cent of predicted. Therefore, the air velocity index of 0.80 was nearly normal, indicating an absence of significant obstructive insufficiency. This was confirmed by the one-second timed vital capacity, which was normal. The walking dyspnea index showed that 45 per cent of the maximal breathing capacity (instead of a normal 20 per cent) was required during a leisurely walk at the rate of 180 feet per minute. Therefore, no obstructive defect was present.

The preliminary impression from the tests was of a moderately severe restrictive ventilatory insufficiency. Right pneumonectomy was considered possible provided the right lung did not contribute very much to total function.

Bronchospirometry for determination of the function of each lung separately showed that the right lung contributed only 5 per cent to the total oxygen uptake, 11 per cent to the ventilation and 11 per cent to the vital capacity (Figure 4). In other words, the patient already had, in physiologic effect, pneumonectomy of the right lung. It was thus determined that the left lung could carry the load alone and the patient was approved for right pneumonectomy.

Case 3. The patient, a man 59 years of age, had had increasing shortness of breath over a period of five years. He had a proved carcinoma of the left main stem bronchus with wheezing cough and considerable mucoid sputum for three years. He appeared to be very short of breath but preliminary studies were not adequate for determining whether the right lung could carry the load if left pneumonectomy were performed.

An x-ray film of the chest (Figure 5) showed the tumor mass in the left hilum with lateral extension

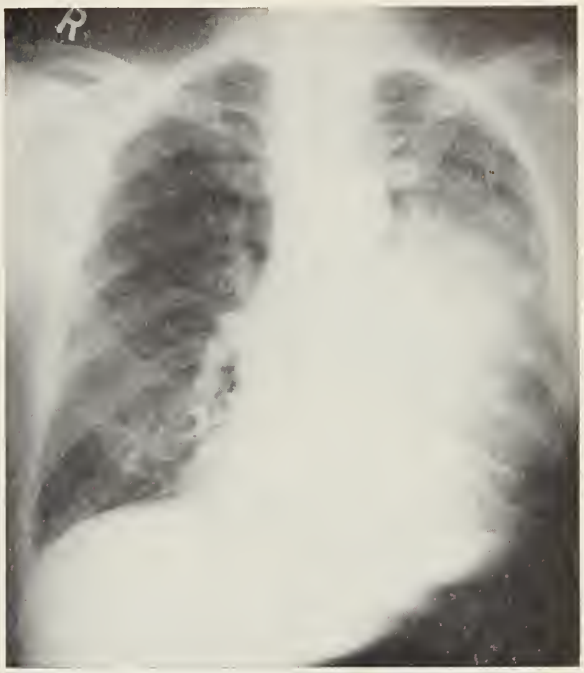

Figure 5 (Case 3).—Proved carcinoma of left main stem bronchus with lymphogenic spread through lung parenchyma. Right lung clear and not especially emphysematous in appearance.

of the process but not much evidence of atelectasis.

Results of pulmonary ventilatory studies were:

	Predicted	Determined	Per Cent of Predicted
Maximal breathing capacity (liters per minute)	119	36	32
Vital capacity, cubic centimeters	3,900	2,940	75
One minute timed vital capacity, per cent of total	75	35	47
Air velocity index	1.0	0.42	....
Walking dyspnea index, per cent	15	70	....

The maximal breathing capacity was reduced to one-third of normal and the vital capacity reduced to three-fourths of normal, thus giving a very low air velocity index of 0.42. This, together with severely reduced one-second timed vital capacity, indicated severe pulmonary insufficiency of the obstructive type. Functional incapacity in this case appeared to be due to advanced emphysema rather than to the carcinoma. Therefore, determination of individual lung performance was needed for final decision regarding the suitability of the patient for operation. Results of bronchospirometric studies (Figure 6) showed the right lung contributing a nearly normal share of function—43 per cent of oxygen uptake, 31 per cent of ventilation and 39 per cent of the vital capacity. It was clear that in the presence of this degree of obstructive emphysema the right lung could not carry the load alone after left pneumonectomy. Operation was not advised. Treatment with nitrogen mustard and x-ray therapy was

recommended and carried out with transient symptomatic relief.

Case 4. The patient, a 26-year-old woman, had had therapeutic pneumothorax on the right from 1943 to 1948 with a good collapse, and left extrapleural pneumothorax from 1944 to 1947 for upper lobe cavitary disease. Attempted reexpansion of the right lung was not very successful and was followed by a tuberculous effusion. Two years after reexpansion of the left extrapleural pneumothorax, a new exudative lesion developed in the left upper lobe.

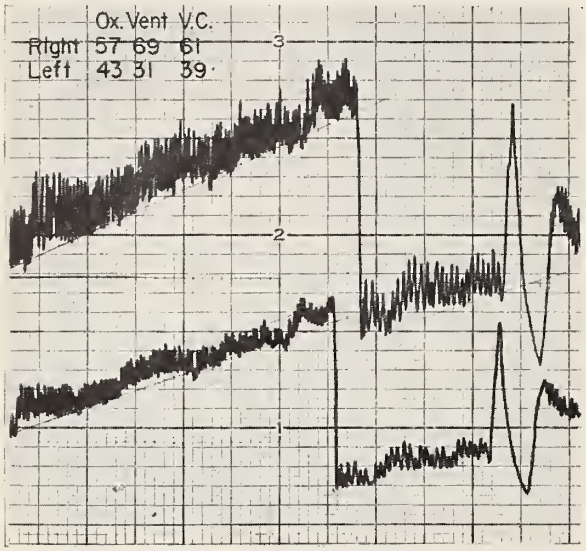

Figure 6 (Case 3).—Bronchospirometric studies show reduced functional oxygen uptake (Ox.) of the left lung (lower tracing and the side affected by the carcinoma) as well as decreased ventilation (Vent.) and vital capacity (VC) expressed in per cent of total for both lungs. But function on the right deemed not sufficiently better than the left to carry the whole load following left pneumonectomy.

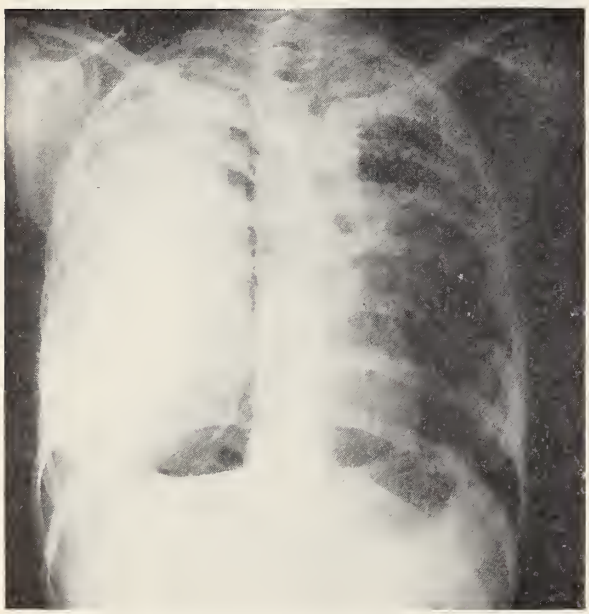

Figure 7 (Case 4).—Old dense pleuritis in right lung, obliterating lung markings, following attempted pneumothorax reexpansion in 1948. Left lung: Old fibrocalcific lesion and pleuritis at left apex and first anterior interspace. New exudative infiltration in area between second and third anterior ribs.

An x-ray film of the chest (Figure 7) showed extensive pleuritis involving most of the right lung with a localized effusion anteriorly placed. There was new infiltration with cavity in the left upper lung in the intraclavicular area.

It was felt that something might be done for the left lung if the right lung were found to be still in good condition beneath the pleuritis. Results of pulmonary ventilatory studies were:

	Predicted	Determined	Per Cent of Predicted
Maximal breathing capacity (liters per minute)	96	51	53
Vital capacity, cubic centimeters (normal timed capacities)	4,020	1,150	35
Air velocity index	1.0	1.51	....
Walking ventilation (liters per minute)	18	24	....
Walking index, per cent (slight dyspnea during walk)	19	45	....

The marginal performance was consistent with a restrictive rather than an obstructive defect. Bron-

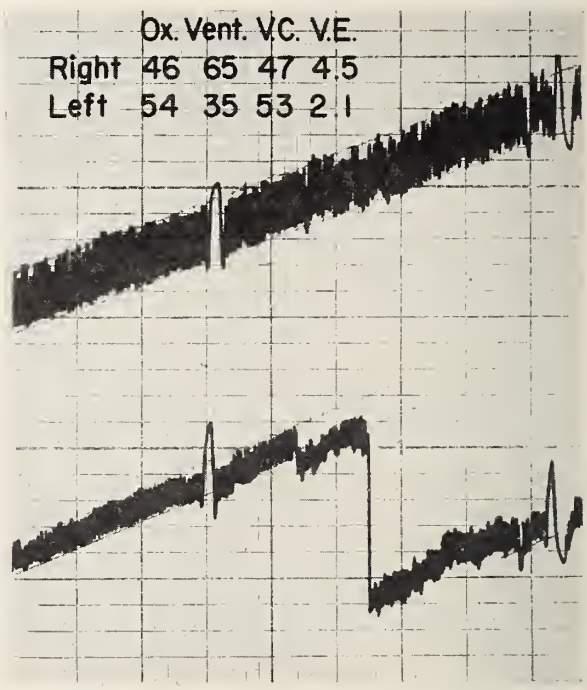

Figure 8 (Case 4).—Bronchospirometry showing better function on the right (upper tracing) beneath the pleuritis than was expected, but with decided restrictive defect as seen in the attempted deep breath of the vital capacity (VC). The left lung (lower tracing) shows better oxygen uptake (Ox.) and vital capacity but poorer ventilation—all expressed in per cent of total for both lungs. VE = Ventilatory equivalent (liters of air ventilated through the lung per 100 cc. of oxygen absorbed).

chospirometry was carried out (Figure 8) to determine the function of the right lung especially. It showed the right lung with surprisingly good function beneath the old pleuritis—oxygen uptake 46 per cent, ventilation 65 per cent and vital capacity 47 per cent. Yet the pulmonary reserve of the right lung was certainly insufficient to sustain life comfortably if function on the left were further diminished by excision or thoracoplasty.

Based on studies of Patton and co-workers.[8] the suggestion was made that a decortication be performed on the right and the patient then be reevaluated. This was done.

Figure 9 shows an x-ray film of the lungs after

Figure 9 (Case 4).—Following decortication of thickened right pleura, with appearance of a remarkably healthy looking lung. Left lung essentially still unchanged.

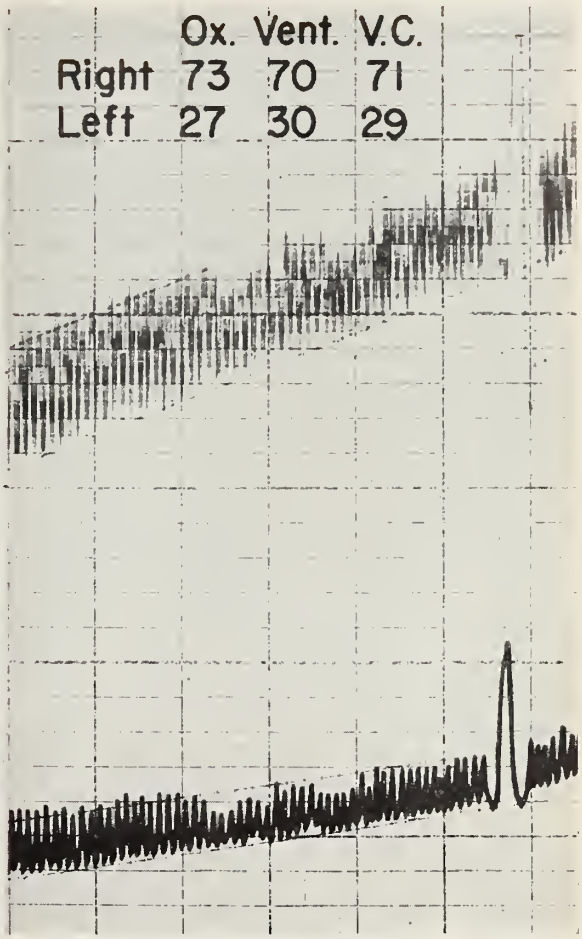

Figure 10 (Case 4).—This spirometric tracing shows excellent recovery of function in the right lung following decortication with loss of restrictive defect as seen in recovery of good ventilation (Vent.) and a good vital capacity (VC). (Ox. = Oxygen uptake—all expressed in per cent of total for both lungs.)

Figure 11 (Case 5).—X-rays before *(left)* and after four months of rest and chemotherapy *(right)*. This shows huge cavity with initial fluid level on the right side and scattered infiltration in left midzone. After four months of treatment there is reduction of cavity size with overexpansion of the right lower lung and decided clearing on the left.

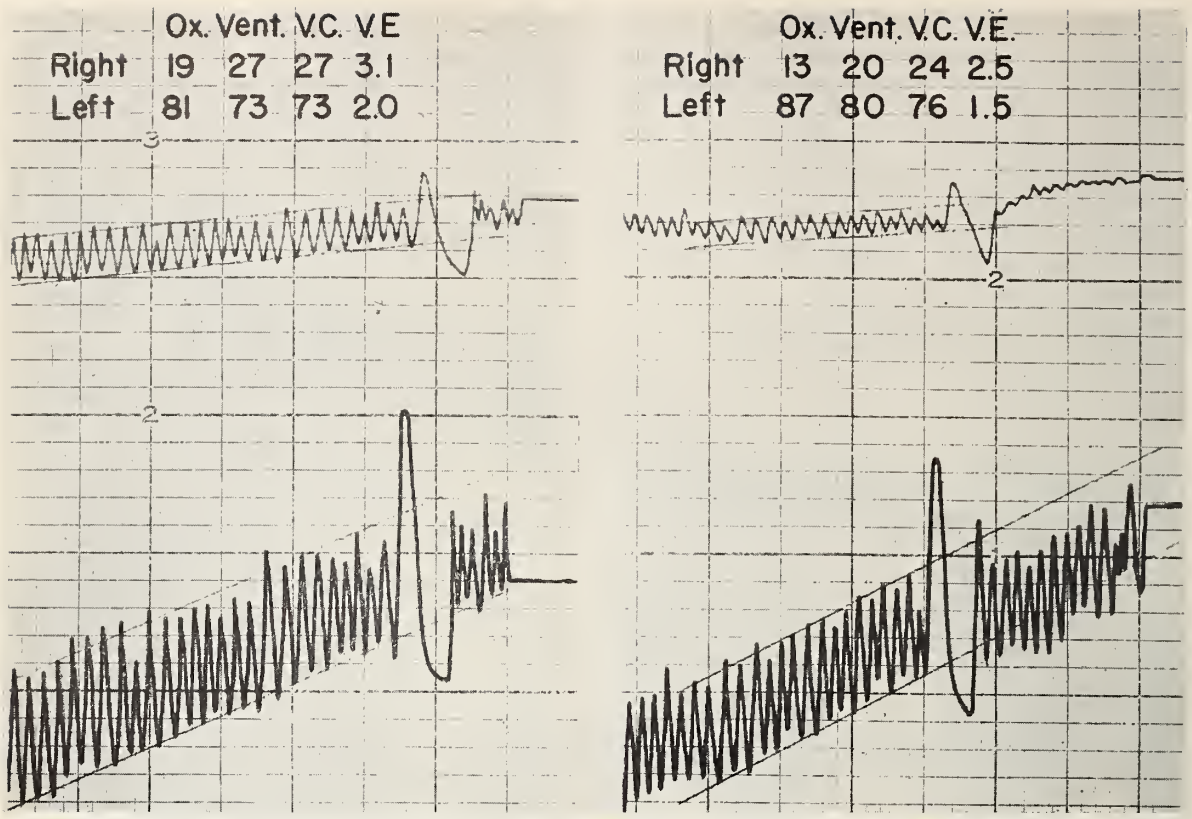

Figure 12 (Case 5).—Bronchospirometry before *(left)* and after four months of treatment *(right)*. Shows very little difference in the individual functional lung reserve, though a little worse on the right (upper tracing) and a little better on the left (lower tracing). It was anticipated that the left lung could carry the full load if a right pneumonectomy proved necessary at operation. Ox. = Oxygen uptake; Vent. = Ventilation; VC = Vital capacity—all expressed in per cent of total for both lungs. VE = Ventilatory equivalent (liters of air ventilated through the lung per 100 cc. of oxygen absorbed).

surgical decortication and wedge resection on the right. The right lung was remarkably clear. Ventilatory studies before and after operation showed improvement of function, as follows:

	Predicted	Before Decortication and Wedge Resection	After Operation
Maximal breathing capacity (liters per minute)	96	51	88
Vital capacity, cubic centimeters (timed capacity was normal)	3,280	1,150	1,800
Air velocity index	1.0	1.5	1.7
Walking ventilation (liters per minute)	16	23	16
Walking index, per cent (no dyspnea walking)	17	45	19

Bronchospirometric studies (Figure 10) seven months after decortication clearly depicted the pronounced functional improvement, the right side carrying 73 per cent of the oxygen uptake. 70 per cent of the ventilation and 71 per cent of the total vital capacity. It was felt that the right side could carry almost any load demanded of it. A left upper lobectomy was carried out without complication or respiratory embarrassment. Thereafter the patient was well and lived a normal life.

The Role of Function Studies in Determining the Extent of Operation

CASE 5. The patient, a tuberculous woman 36 years of age, the mother of a 4-month-old child with tuberculous meningitis, was herself completely free of clinical symptoms. In a comparison of films of the patient's chest before and three months after streptomycin-para-amino salicylic acid therapy along with bed rest, it was noted that a large cavity with a fluid level occupying more than half of the right lung before treatment was greatly reduced after treatment (Figure 11). Infiltration scattered over the midportion of the left lung also was greatly improved. The x-ray improvements from short-term therapy were not reflected in function studies.

	Predicted	Determined Jan. 21, 1952	Determined April 21, 1952
Maximal breathing capacity (liters per minute)	80	33	33
Walking dyspnea index, per cent.	17	40	40
Vital capacity, cubic centimeters	2,760	1,550	1,550
(Per cent in 1 second)	75	58	52
Air velocity index	1.0	0.73	0.73
Residual volume, cubic centimeters	700	.....	540
Residual volume: Total lung capacity ratio, per cent	20	.....	26
Pulmonary mixing index	1.5	.....	0.95

Studies of pulmonary function before and three months after the start of treatment showed marginal overall performance in both instances, with greatly reduced maximal breathing capacity and vital capacity, some slowing of the one-second timed vital capacity consistent with the slight increase of the ratio of residual volume to total lung capacity. This is primarily a restrictive defect without evidence of a minor obstructive element, seen in an air velocity index of 0.73.

Bronchoscopy showed a partially stenosed right upper lobe bronchus and a bent and therefore narrowed right lower lobe bronchus. The left bronchial tree was normal.

Bronchospirometric studies (Figure 12) before and after three months of chemotherapy showed the right lung contributing only 19 per cent of oxygen uptake, 27 per cent of ventilation and vital capacity with a slightly low ventilatory equivalent, that was due probably to the proportionately lower maximal breathing capacity. Here the question that arose was whether only the right upper lobe needed to be excised and the lower and middle lobes could be salvaged for their functional contribution later. At operation, disease was found scattered throughout all lobes on the right. Since the left lung had been shown to be carrying the respiratory functional load without difficulty, right pneumonectomy was found necessary and was carried out. Upon recovery the patient was well and lived a normal life of active work.

Case 6. A 62-year-old man with far advanced emphysema was seriously incapacitated by dyspnea. An x-ray film showed carcinoma of the esophagus (Figure 13). Pulmonary function studies showed a maximal breathing capacity of 21 per cent of predicted, with a very large vital capacity of 91 per cent of predicted and, therefore, an extremely low air velocity index, indicating serious obstructive emphysema.

In spite of these findings and a recommendation against any transthoracic operation, the surgeon (whose faith in function studies resided chiefly in the vital capacity), noting that the vital capacity was 91 per cent of predicted, proceeded to resect the tumor through the left side of the chest under pentothal-curare-ether anesthesia. The patient died eight hours postoperatively of respiratory failure.

DISCUSSION

Preoperative pulmonary evaluation entails thorough investigation of the inconsistencies between the clinical impression of suitability for operation and the borderline functional reserve where operation is imperative. The area of pulmonary symptomatology unexplained by x-ray examinations and overall clinical estimations of function has been clarified by definitive pulmonary function studies.

Figure 13 (Case 6).—Proved carcinoma of the esophagus. Upper mediastinal shadow greatly widened with apparent marked emphysema and low irregular diaphragm.

Furthermore, the extent and type of surgical procedure to be planned for the best results, have been, in our experience, greatly influenced by the factual data of overall and individual lung function studies. The patient with good lung function can be evaluated with considerable success by the simpler techniques and by clinical judgment. Careful and searching function studies, however, are of the utmost importance for the patient with borderline pulmonary reserve.

In this latter group the decisions for or against operation are among the most difficult, and no stone in the documentation of pulmonary reserve should be left unturned.

Operation upon "poor risk" patients has been greatly enhanced by the advances in modern chemotherapy as well as in estimating pulmonary function. Middlebrook and co-workers[7] showed this in tuberculosis through newer concepts in drug therapy while advancing the "team concept" of the internist, the bacteriologist, the physiologist and the surgeon in not only preoperative evaluation of the pulmonary status but their cooperation throughout the course of the surgical procedures. Watson and Gaensler,[9] Woodruff[10] and others stressed that the type of pulmonary operation will be influenced by

the degree of disability as well as by the pattern and distribution of function within the lung.[5,6]

From the viewpoint of the internist and chest physician, the definitive factual data of detailed physiologic pulmonary studies are an invaluable aid in preoperative pulmonary evaluation. Clinical judgment alone will screen out the normal and the severely insufficient cases. There are, however, the many borderline and complicated cases that demand the most meticulous evaluation of pulmonary reserve. These studies are necessary in such circumstances not only to prevent operative fatalities and postoperative pulmonary crippling, but also in order that the benefits of operation may be made available to those patients who, on clinical grounds alone, might be denied this form of treatment.

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Pulmonary Heart Disease

A Panel Discussion

Participants: **MAURICE ELIASER, JR., *M.D.*, San Francisco, Moderator; HURLEY LEE MOTLEY, *M.D.*, and MORTON L. PEARCE, *M.D.*, Los Angeles, and ARTHUR SELZER, *M.D.*, San Francisco**

DR. ELIASER: The discussion on pulmonary heart disease will be limited to the chronic form, or what has been termed chronic cor pulmonale. For expedience we shall discuss only those conditions in which cardiac or circulatory disturbances result from diseases of the lung or the pulmonary artery or its branches.

We shall exclude acute cor pulmonale and the various forms of right ventricular failure that are frequently associated with nonpulmonary conditions such as left ventricular failure and mitral stenosis. We shall also omit those lesions characterized by left to right shunts—namely, congenital patent ductus arteriosus, interatrial and interventricular septal defects and malformations in which the pulmonary veins empty into the right atrium or superior vena cava.

The panel will be primarily concerned with those chronic states where cor pulmonale results from either one or both of the following conditions:

1. Chronic diffuse obstructive emphysema.
2. Pulmonary vascular tree lesions—intraluminal or extraluminal and in combination.

The first thing that I would like to ask the panel, which, incidentally has representatives from both Northern and Southern California, is, "Has the incidence of pulmonary heart disease increased, and, if so, why?"

INCIDENCE

DR. PEARCE: The incidence of pulmonary heart disease is very definitely on the increase. Institutions that publish the incidence of various types of heart disease have shown a pronounced increase in this disease. Question arises as to whether this is because we now recognize it and didn't before, or is it really increasing. In my mind, there is no doubt at all that there is a decided increase in pulmonary heart disease and I suspect that as we keep people alive longer with chronic lung disease, as we do more thoracic operations, we are going to continue to see even more pulmonary heart disease.

DR. MOTLEY: That's my feeling also—that people are being kept alive longer today with better treatment both medically and surgically, and with the antibiotics life is prolonged until pulmonary heart disease may show up.

DR. ELIASER: These gentlemen, obviously, are from Southern California. Dr. Selzer, do you think it has anything to do with the air we breathe?

DR. SELZER: It may, but I would like to take the opposite standpoint in part. I think that the diagnostic facility and the accuracy with which we diagnose cor pulmonale now plays a part in the statistical increases; and my own observation has been that there may be certain overdiagnosis and we have on many occasions suspected cor pulmonale in patients with emphysema just to find out that they had the ordinary variety of coronary disease which happened to occur in patients with emphysema. It may be that the pendulum swung a little too far to the other side.

DR. MOTLEY: Could I interrupt just one second? I'd be interested to know what the feeling of the other members of the panel is about smoking.

DR. ELIASER: Do we have any volunteers?

DR. PEARCE: We're studying that aspect, but we have not been able as yet to show any quantitative difference from the standpoint of pulmonary function, either as to smoking or smog.

DR. ELIASER: We might go on to the classification of the various lung diseases that result in pulmonary heart disease. I think we agree that chronic diffuse destructive emphysema ranks No. 1 on our list. I would like to know if anyone on the panel would like to discuss the various causes of diffuse emphysema, including chronic bronchitis.

DR. PEARCE: As to the causes of diffuse obstructive emphysema: In almost all instances persons in whom the condition ultimately develops have a

From the Annual Scientific Session, California Heart Association, Carmel, May 19, 1956.
Submitted January 7, 1957.

prolonged history of repeated pulmonary infections, usually with chronic bronchitis that flares up and subsides and may be associated ultimately with bronchiectasis. It is rather unusual to see a patient with late stages of a pure obstructive emphysema; there is always a degree of pulmonary fibrosis of restrictive aspect to the pulmonary disease as well as the obstructive aspect. Because of the important things we can do in prevention. it should be remembered that, almost always, obstructive emphysema is the late result of chronic pulmonary infection, with or without asthma.

Dr. Selzer: I would agree with that. I think we probably should draw a very distinct dividing line between obstructive emphysema and the ordinary variety of senile emphysema (which some observers even refuse to call emphysema, using terms like senile kyphosis instead) in which the effect on the pulmonary function is relatively slight and the effect on the circulatory system is practically nil.

Dr. Motley: I'm one who feels that emphysema is not necessarily a part of the aging process. Our studies indicate that normally even in persons up to 70 years of age and beyond, the residual air is not above 35 per cent of total lung capacity. I know that there are some investigators who will disagree with this figure. Comroe in his book on the lung gives a figure as high as 50 per cent with no symptoms referable to the cardiopulmonary system. This is contrary to my experience. I feel the selection of cases for determining the upper limits of normal cannot be made alone from the x-ray studies or the subject's story, and that the clinical selection of what is considered normal may be misleading. If two criteria are used. (1) a normal maximal breathing capacity; and (2) a normal timed vital capacity. regardless of age, in my experience the residual air has not been found above 35 per cent of total lung capacity, so I don't feel that emphysema is part and parcel of the aging process normally. There are many persons with a residual air above 35 per cent of total lung capacity who are capable of doing their jobs and have no complaints. The reason for this is the big reserve in the lung normally, so that by the time subjective complaints of dyspnea are present the lung changes represent an advanced stage. I feel that residual air above 35 per cent of total lung capacity is abnormal, just the same as systolic blood pressure of 200 mm. of mercury is abnormal even though the individual may have no subjective complaints. Infection and bronchospasm are two very important etiologic factors in pulmonary emphysema. Also, there appears to be a hereditary factor—a difference in protoplasm, making some persons more prone to the stresses and strains that cause emphysema to develop. Smoking also appears to be an important factor in emphysema in some cases, although difficult to prove, for many heavy smokers never develop emphysema. It is of interest that practically all the patients I have observed with severe emphysema who have never been exposed to any kind of dust inhalation such as might produce emphysema (as silicate, diatomaceous earth or asbestos) do have a history of prolonged heavy cigarette smoking—two or three packs a day.

Dr. Eliaser: Regarding the second major classification of pulmonary diseases, I should like to ask the panel what are the more common varieties of pulmonary vascular diseases that produce this condition, and what do we mean by alveolar capillary block?

ALVEOLAR CAPILLARY BLOCK

Dr. Selzer: I think that alveolar capillary block simply means that there is difficulty in diffusion between the capillaries and the alveoli. I don't know whether we can consider this actually a circulatory disease. I think it is a disturbance in the gas exchange which does not necessarily lead to the condition that we are interested in here. I think perhaps one ought to state that the diagnosis of cor pulmonale or pulmonary heart disease is one of increased pressure in the pulmonary artery; in other words, what we are looking for is the effect of pulmonary hypertension on the heart, leading to its failure. We don't know what the relationship is between alveolar capillary block and pulmonary hypertension. I think perhaps we ought to separate the pulmonary function aspect of these diseases from the circulatory effect. They very often occur together but they also may be separate.

Dr. Motley: We have been interested in trying to get more precise information as to why the oxygen saturation of arterial blood is reduced in emphysema. When special tests were used, there appeared to be little evidence of a true diffusion difficulty at the alveolar-capillary membrane, such as typically occurs in beryllosis—which is a classic example of diffusion difficulty. The common finding in emphysema demonstrated every day is the presence of poorly ventilated alveoli, and with exercise most often a drop in saturation occurs, due principally to the shunting of blood through nonventilated areas or very poorly ventilated areas.

Two very simple tests can be used to demonstrate these findings. In the past few years a great deal has been written about the diffusion capacity of the lung. Reduced diffusion capacity of the lung is a general term and the condition may be due to several things and does not necessarily involve a true diffusion difficulty at the alveolar-capillary membrane with an increased arteriovenous gradient for oxygen

—for example, a reduced blood flow in pulmonary stenosis or in pulmonary hypertension with septal defect. The two simple tests entail high oxygen breathing and pressure breathing on air. In one the inspired oxygen tension is increased on a 32 per cent oxygen breathing mixture enough to overcome a diffusion difficulty, if that is the primary difficulty on air breathing. The decrease in saturation with moderate exercise, which occurs most often in emphysema, is not overcome—that is, saturation does not return to normal—even on the high oxygen mixture (32 per cent oxygen), thus demonstrating the absence of diffusion difficulty. The other test is the use of intermittent positive pressure breathing with compressed air only—no bronchodilators. In most cases of emphysema a significant rise in the saturation, sometimes up to normal, results from the pressure breathing on compressed air only; and the only way to explain this finding is on a basis of the presence of poorly ventilated alveoli, with the pressure breathing providing improved aeration.

Persons with emphysema have impaired movement of the diaphragm, loss in lung elasticity and increased breathing resistance, so that alveolar aeration is impaired and constitutes an important aspect in the blood gas exchange. If the saturation drops with exercise in a patient with emphysema, the low oxygen saturation represents a period of acute hypoxia. Acute hypoxia elevates pulmonary artery pressure and increases resistance. If the saturation drops 5 per cent or 10 per cent, the patient is advised not to walk up steps or uphill any more than he has to—or, if he lives on a second floor apartment, to get a first floor apartment. Every little acute episode represents an insult with a little increase in work load on the right side of the heart, and hastens the day right heart failure develops.

Dr. Pearce: My impressions are pretty much those which have been mentioned here—that is, that the primary difficulty leading to pulmonary hypertension in patients with cor pulmonale is basically one of distribution of gas to the right place and that alveolar capillary block is a relatively rare thing.

POLYCYTHEMIA

Dr. Eliaser: The next thing we should discuss is the occurrence of polycythemia in pulmonary heart disease. Is it of any prognostic importance and does it help in differentiating between patients with considerable emphysema and those with little?

Dr. Pearce: This is an area in which I think you get many different impressions. Mine is that patients who get polycythemia fairly early in the course of pulmonary disease are the patients who tend to get cor pulmonale. Of course, by and large, they are the people with the most severe anoxia in the obstructive group, also the patients who have the most severe CO_2 retention.

Dr. Motley: My co-workers and I have been unable to make any correlation whatsoever between the hemoglobin values and the severity of pulmonary emphysema as measured by function measurements. If the hemoglobin is elevated we suspect a cardiac factor in emphysema. The oxygen capacity method, which I think is one of the more accurate measurements, is used to determine hemoglobin, and all of our experience has been at sea level pressure. There appear to be some differences between sea level and 5,000 feet altitudes like Denver and Salt Lake City, according to Dr. Hecht. Although there is no correlation between the severity of the emphysema and the hemoglobin level, if the patient starts going into the slightest degree of right heart failure, the hemoglobin level goes up. Hence, increased hemoglobin indicates the presence of some element of right heart failure.

Dr. Selzer: It has been my impression that the relation between pulmonary heart disease, specifically pulmonary hypertension, and polycythemia is rather vague. There are enough cases of severe pulmonary hypertension other than emphysema in which there is no polycythemia; especially, many of the patients with so-called primary pulmonary hypertensions never get polycythemia and anoxemia. On the other hand, in dealing with emphysema, hypoxia is one of the factors in the production of cor pulmonale and is also a stimulus for the formation of excess hemoglobin, so that the relationship works in one direction but not in the other.

RESPIRATORY ACIDOSIS

Dr. Eliaser: I should now like to bring up the rather interesting problem of respiratory acidosis. Is it of any significance in the differential diagnosis between the various forms of pulmonary disease, what are the conditions that produce it, and are there any factors that tend to accelerate its onset?

Dr. Pearce: Respiratory acidosis is the thing we all fear particularly in these cases, because it is at this point, when respiratory acidosis becomes severe, that the end is usually in sight unless the cause is something that is quickly correctable, such as a pulmonary infection. Respiratory acidosis is seen most commonly in the obstructive diseases. In those in which there is primarily an abnormality in the distribution of gases, anoxia occurs long before carbon dioxide retention does, because CO_2 as a gas is about 20 times more diffusable than oxygen.

Dr. Motley: Respiratory acidosis develops when alveolar ventilation is inadequate to blow off the carbon dioxide. The body is giving off almost as much

CO_2 all the time as oxygen is taken in, and, as Dr. Pearce has mentioned, the CO_2 in solution is about 25 to 30 times as diffusable as oxygen across the pulmonary membranes. Hence, for all practical purposes the CO_2 in the arterial blood is the same as in the alveoli—that is, the mean pCO_2* pressure. The determination of the arterial pCO_2 provides a measure of the adequacy of alveolar ventilation. If the arterial CO_2 content or pCO_2 is elevated, then alveolar ventilation is inadequate. However, one cannot determine from the CO_2 level whether the patient is in acidosis or not at the time. Many patients with severe emphysema always have high CO_2 levels. The pCO_2 may be 60 mm. of mercury or more (normal 40 mm. at sea level), yet the arterial blood pH be 7.45. In other words, they are compensated. The emphysema has developed over a period of years and they are compensated to the increased level. Trouble develops when such a person gets an infection with bronchospasm and plugging with mucus and secretions. The alveolar ventilation is reduced still more in the presence of little or no reserve and immediately the CO_2 goes up still more and the pH goes down below 7.38—that is, the arterial blood pH, which is the pH we must measure to have a guide of what is going on in the lung (venous blood is unsatisfactory).

The patient in acidosis requires prompt treatment to increase alveolar ventilation. The arterial blood pH is a real and indispensable guide in determining whether or not acidosis is present in these people with severe degree of pulmonary insufficiency. In my experience the calculated pCO_2 values or the calculated pH values in chronic pulmonary insufficiency of severe degree are not accurate even when one knows the arterial CO_2 content; and the CO_2 combining power may be completely misleading.

CARDIAC OUTPUT

DR. ELIASER: Now I have a more difficult question. Why is it that some persons with pulmonary heart disease have ostensibly high cardiac output and some have low output?

DR. SELZER: We have been interested in this subject and have studied the cardiac output in a series of between 20 and 30 patients with cor pulmonale of various degrees of severity. In our experience the high output is very rare. We have had, I think, only one or two patients in whom the cardiac output was definitely abnormally high. There are some in whom perhaps in relation to their symptoms, the output appears to be higher than average but is still within the normal zone. I think most of these people sooner or later as they develop more circulatory disturbance go into low output failure—that has been our experience.

DR. MOTLEY: I would agree with that with regard to the resting values, and certainly with exercise they are unable to increase the cardiac output normally corresponding to the exercise given. Some patients almost seem to have a fixed level to which the output can be increased, only a few liters above the resting level, regardless of how much exercise is given. With the more severe exercise on a treadmill or bicycle, they'll just fatigue quicker. One simple test which reflects the ability to increase the pulmonary blood flow is the exercise oxygen uptake. If the exercise oxygen uptake does not increase to a degree corresponding to the degree of exercise given, and if the minute ventilation is within the normal range, this finding indicates that the pulmonary blood flow is reduced, and indirectly that pulmonary vascular resistance is increased.

DR. PEARCE: We have been looking for patients with high output failure, so-called, due to pulmonary disease, and we certainly have been able to find very few. We've done dilution output studies on a large number of patients with chronic lung disease looking particularly for this group. I think the point Dr. Motley makes is a very good one—that even when you do find patients with moderately elevated output (and we've found them even as high as 10 liters per minute) with exercise they are not able to raise their output at all.

CLINICAL ASPECTS

DR. ELIASER: We might now comment on some of the clinical aspects of this condition and inquire whether there are any bedside clues to the presence of pulmonary heart disease in either the patients' symptoms or in the detection of any specific physical signs.

DR. PEARCE: Well, as far as determining cor pulmonale in a sense of hypertrophied right ventricle in itself is concerned, I think this is difficult to do by clinical signs alone. Certainly one can be suspicious about it when one finds the pulmonary disease which one can commonly detect by physical signs, particularly obstruction and restriction of ventilation. I think that as far as the physical signs of right hypertrophy itself go, looking for the accentuation of the second pulmonic sound, as has been mentioned earlier here today, is not particularly helpful. I have found that the appearance of a diastolic gallop along the sternal border has been a more useful sign than the accentuation of the second pulmonic sound which, in patients with barrel chests particularly, is something you may never hear at all, even with an extraordinarily high pulmonary artery pressure.

*Abbreviation for partial carbon dioxide.

DR. SELZER: I would agree with Dr. Pearce's statement. I think if the chest is not too barrel-shaped, we can also pay some attention to the right ventricular type of pulsation, which is quite helpful in diagnosing right ventricular hypertrophy.

DR. PEARCE: Sometimes when you can't detect this pulsation along the left sternal border because of a large chest, you can sometimes feel it by hooking your fingers under the xyphoid process and then feel a very active right ventricle.

DR. MOTLEY: I think I might add that one should be on the lookout for pulmonary heart disease in a patient where the breath sounds are distant. The evaluation with the stethoscope and the physical examination of the chest is better correlated with the degree of emphysema by pulmonary function measurements than by x-ray films. The use of the stethoscope is definitely indicated in chronic pulmonary disease, although some have advocated throwing it away. So often the patient comes in with right heart failure, and the cardiologist treats the right heart failure, but sometimes overlooks the underlying pulmonary disease.

SPECIALIZED DIAGNOSTIC PROCEDURES

DR. ELIASER: We can now move on to some of the more specialized diagnostic procedures; for example, what are the indications for pulmonary function studies and which ones are more frequently used?

DR. MOTLEY: I think any case that presents the clinician with a pulmonary problem in which there is possibility that function may be impaired, demands a little further investigation. Spirograms offer a rather simple test that can be done very quickly. The information obtained consists of total vital capacity, timed vital capacity, and the maximal breathing capacity, with a further determination of the maximal breathing capacity after administration of a bronchodilating drug (a test for bronchospasm). Also, a record of the shape of the spirogram tracing is very desirable, because in emphysema there is a very characteristic pattern with prolongation of exhalations (in some instances up to 12 to 15 and 20 seconds or more). One can often get some very useful information by asking the patient to take a deep breath and then to blow out as rapidly as possible. If the blow out is prolonged for 10 to 15 seconds, the extra time is very readily apparent; some patients even wheeze. Total vital capacity should never be used alone as a single measurement, as it may be misleading in some instances. The spirogram measurements may be indeterminate in some cases, or if the readings are either normal or extremely abnormal, that may be all that one needs in a particular case. If the spirogram measurements are moderately reduced, then we need to measure residual air to evaluate the severity of the emphysema. Residual air measurement is the only way that we have for accurately assessing quantitatively the degree of pulmonary emphysema.

Other tests, such as the use of a nitrogen meter with a single deep breath of oxygen or measurement of the nitrogen washout by individual breaths, require a complicated electrical set-up. The residual air is a simple measurement, but it is a laboratory and not an office procedure.

To complete the study, the blood exchange must be evaluated. Even though the patient may not have cyanosis, he may still have unsaturation and one must compare rest and exercise. Hemodynamically, rest and exercise represent two different situations in a given patient. The resting saturation may be almost normal, but exercise will bring out gross abnormalities. Arterial blood studies may be all that are needed in some cases. Exercise oxygen uptake has already been referred to as a very useful test and well correlated with complete function measurements where the pulmonary blood flow is reduced regardless of the cause, whether it be pulmonary emphysema or pulmonary hypertension with an atrial septal defect or with pulmonary stenosis. Anything that reduces the pulmonary blood flow will reduce oxygen uptake. Every case presents a specific problem, and in some just a few tests such as are provided by spirograms are in themselves adequate, or they may point the need for more complete study. I know of some physicians who have the Collins 13.5 liter respirometer in their office (probably the best apparatus for obtaining this information). I know of one chest physician who takes a spirogram on practically every patient who is getting an x-ray film of the chest.

DR. SELZER: I have nothing to add to the pulmonary function studies. I think, however, that it should be emphasized that in cor pulmonale there is no other way of actually knowing what one is dealing with than by cardiac catheterization. Pulmonary artery pressure at rest and exercise cannot be judged by any other indirect means.

DR. PEARCE: The only thing I have to add to what has been said is that in the very ill patient where the tests of respiratory function are very difficult to do, when we have acute situations in the hospital we find that frequent determination of the pH and the CO_2 content of the arterial blood gives the most help in determining which way they are going. I might say here parenthetically to beware of the report of CO_2 combining power on venous blood which has been suggested by some observers to be a good measure of CO_2 retention. This is a real booby trap, I think.

TREATMENT

DR. ELIASER: Now, as to treatment. I should like to bring up one question. There was a concept several years ago that digitalis may be bad for patients with pulmonary heart disease or that it may not do very much good. I'd like to get an expression of opinion from the panel: Should patients with pulmonary heart disease who are in congestive failure receive digitalis and, if so, which one of the glycosides?

DR. PEARCE: I think they should by all means receive the glycosides and I'm not particularly partial as to which they receive. Unless I'm in a hurry, I generally use digitalis leaf. Some of the bad results in the use of glycosides in these patients have been due to treating only the myocardium and not treating the pulmonary infection and obstruction in the patient with severe emphysema who is in failure.

DR. SELZER: Dr. Eliaser, I think that the concept that you mentioned originated in England; I think they may have changed their views since, and they all agree that digitalis is not contraindicated. However, I think it is very strongly disappointing in cases of cor pulmonale. When we use it, and I think we should, we very seldom see any spectacular effect.

DR. ELIASER: Another controversial therapeutic measure is phlebotomy. When should that procedure be used, and what should be used as a criterion for discontinuing it?

DR. SELZER: This is a subject of considerable controversy, for polycythemia increases the oxygen-carrying capacity and in a way is considered a useful compensatory measure. Most physicians feel, however, that it overshoots usefulness and may become harmful. One should try not to expect too much of phlebotomy in moderate polycythemia, but when the packed cell volume is 60 per cent or more, bleeding should be done to bring it down to about 55 per cent.

DR. ELIASER: I'm about to carry coals to Newcastle. Dr. Motley, when is intermittent positive pressure breathing indicated and what are its contraindications, if any?

DR. MOTLEY: I feel that intermittent positive pressure breathing (IPPB) has a very definite place in the treatment of chronic pulmonary disease. In severe emphysema IPPB is the most efficient method for the administration of bronchodilators and antibiotic, if the patient has an infection in which an antibiotic is indicated. The main function of the lung is to get oxygen into the blood and get rid of CO_2 adequately, and physiological studies indicate that IPPB improves this function in emphysema. Secondly, intermittent positive pressure breathing promotes bronchial drainage and helps raise secretions. This has been observed especially in coal miners as a group. Coal miners who have been away from the mines for as long as two years have started spitting black soon after IPPB was started. The third aspect with IPPB is breathing exercises. A lot has been written on breathing exercise, but in my experience it is hard to get patients to systematically take breathing exercises that are effective, and often in severe emphysema they cannot take effective breathing exercises. A patient with emphysema may be fluoroscopically observed to have very little movement of the diaphragm and a shallow type of breathing, but when fluoroscopy is repeated with IPPB increased movement of the diaphragm and deeper ventilation may be seen; and this is reflected in the arterial blood studies, for the oxygen tension goes up and the CO_2 goes down with administration of compressed air only (no oxygen with bronchodilators). The net result of IPPB is to keep the airways open by more effective treatment of bronchospasm and promoting bronchial drainage.

Follow-up studies, after three years, of patients with severe emphysema who have their own IPPB units for use at home and who have taken the treatments regularly and properly have shown that the residual air was not increased. I think that the only way patients with severe emphysema can hope to obtain the maximum benefits possible from the use of IPPB is to have a unit for use at home where, to start with, they may take three or four treatments a day of 15 to 20 minutes each. Eventually the number of treatments may be cut down to one or two a day in the less severe cases. However, the patients are going to require treatments for emphysema for the rest of their lives, as this condition tends to be slowly progressive; and unless one can prevent progression of the increased residual air (the best method to evaluate changes over long periods) the course is progressively downhill. Patients with emphysema often date the beginning of illness from an infection which calls it to their attention, although the emphysema has been present for many years, slowly progressive. Intermittent positive pressure breathing should be used in conjunction with all the other treatments indicated, such as use of diuretics, digitalis, low sodium diet, antibiotics and wetting agents. IPPB can be used in conjunction with tracheotomy, and in a few cases this has been life saving. IPPB can be used to supplement the Drinker respirator, especially with tracheotomy. The emphysema patient gets an infection, bronchospasm and the smaller bronchioles become plugged, alveolar ventilation is decreased, CO_2 increases, and respiratory acidosis develops; death then follows unless something is done about improving alveolar ventilation, and supplementary pressure breathing may be required continuously for several days.

1428 Bush Street, San Francisco 9 (California Heart Association).

End Results in Parotid Tumors

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• Management of parotid tumors can be based on a clinical classification of these lesions as being either "encapsulated" or infiltrating.

The Warthin tumor (papillary cystadenolymphomatosum) is a benign encapsulated tumor, often occurring multicentrically or bilaterally especially in the lower pole area of the parotid. It is characterized clinically by its softness and fluctuation in size and a high incidence in elderly men.

The so-called "capsule" of well demarcated mixed and mucoepidermoid tumors is represented by a condensation of host fibrous stroma, in the interstices of which tumor cells may be present.

The "encapsulated" tumors should be excised with a "shell" of uninvolved parotid tissue. To do this safely, the facial nerve should first be isolated.

Total parotidectomy is necessary only if the size of the tumor, the multiplicity of recurrences, or the infiltrating nature of the tumor are such that complete eradication of the primary site must be done.

Radical neck dissection is never performed electively except in the small group of nonencapsulated infiltrating primary lesions.

In a series of cases of previously untreated parotid tumors treated by the method outlined, the local parotid recurrence rate was less than 1 per cent.

ALTHOUGH THERE HAVE BEEN many excellent papers published recently on the subject of parotid tumors, many important questions relative to the natural history and management of these lesions still remain either unanswered or neutralized by diametrically contradictory statements.

Unfortunately, the means usually resorted to for solution of problems of this type is a review of many cases documented by a large and varied group of clinicians, with operation done by numerous surgeons, often histologically reviewed by different pathologists and finally analyzed by one or several members of a writing team who interpret the findings of the others as best they can by making due allowances for omissions in the notations and by grouping together various facts of numerous observers who have used different and varied nomenclature. Anyone who has tried to make such an analysis of the charts of others realizes how much he has to read into and between the lines and how often he has to decide whether one historian uses "pigmented lesion" to mean black while others mean brown or red, and whether a "large" lesion is 1 cm. or 10 cm. in diameter and if a "nonpalpable node" was really palpable, and vice versa. The list of such variables could be extended. The errors possible in this kind of analysis can be compounded if the group analyzing the charts hands them over to a third echelon for final interpretation and analysis. It is, therefore, obvious that the more one can reduce the many variables involved in such an analysis, the more objective should be the end results. The validity of the conclusions will be inversely proportional to the number of variables involved in the study. In the present study such an attempt has been made by only including cases of parotid tumors managed by one surgeon who also carried out the follow-up observation and analyzed the data.

MATERIAL

The material was 218 cases of parotid tumor in which the patients were observed for periods of one to nine years. Many questions can be answered on the basis of a follow-up of this length, while the answers to others will require even longer periods.

Presented before the Section on General Surgery at the 85th Annual Meeting of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

From the Department of Surgery, Cedars of Lebanon Hospital, Los Angeles.

METHOD

In all cases surgical operation was done (see Figures 1 to 6). External radiation was used postoperatively in certain selected cases. The type of operation was standardized and therefore performed in the same manner in all cases. Only the extent of the operation was varied, but on one basis only—the extent of the disease.

Most parotid tumors are well defined and limited by a so-called capsule. This "capsule" (directly related to the slow growth of the tumor) is only a condensation of the host fibrous stroma in the interstices of which are islands or clumps of tumor cells. The surgical objective, then, is complete removal of the tumor and the "capsule." To do this an intact shell of uninvolved parotid tissue around the palpable mass must be taken. It is only rarely necessary to do total parotidectomy to accomplish this purpose. Even then, total parotidectomy is never performed "en masse" unless the facial nerve is totally sacrificed. Technically, if the nerve is spared, a total parotidectomy is performed piecemeal so that tiny

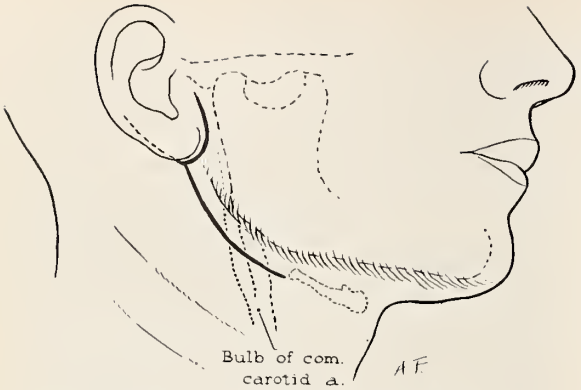

Figure 1.—Illustrating the "Y" incision with the preauricular arm placed in a natural wrinkle very close to the tragus and the cervical arm paralleling an adjacent neck crease as it is extended to the tip of the hyoid.

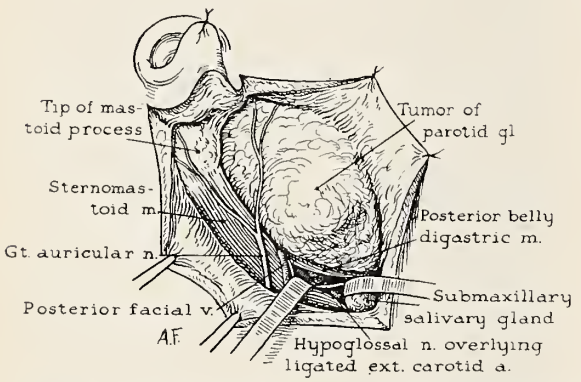

Figure 2.—The anatomical landmarks displayed after elevation of the skin flaps. The external carotid artery may be ligated at this time just caudad to the posterior belly of the digastric muscle.

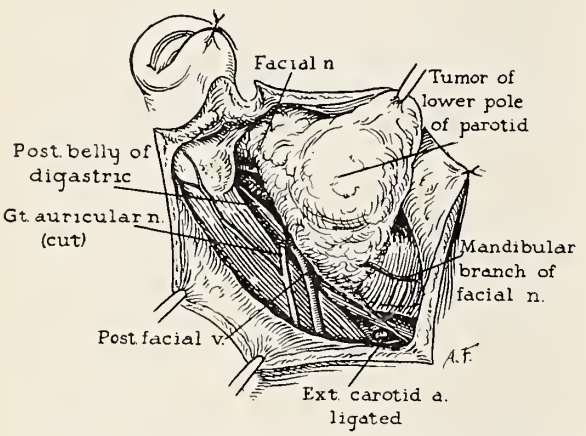

Figure 3.—By tracing the posterior belly of the digastric muscle to its origin on the medial surface of the mastoid process, the main stem of the facial nerve is identified as it lies 1 to 2 cm. deeply medial to this point. When the volar surface of the tip of the index finger is placed on the medial surface of the mastoid, the nail will be in contact with the main stem of the facial nerve.

remnants of parotid tissue are left "in situ" in all instances.

Total parotidectomy is often recommended because of the multicentric nature of these "encapsulated" tumors. The rarity[3] of such an occurrence in previously untreated cases makes this recommendation entirely invalid. Presumably the high percentage of multicentricity refers to cases in which operation has been done and inadequate excision or enucleation has left remnants of capsule with attached tumor cells in the perimeter of the tumor bed. From these multiple points growth may take place into the previously made surgical field, giving rise to a false genetic manifestation of multicentricity.

In the present series no attempt was made to deliberately do a total parotidectomy as a finite procedure. If the tumor was such that total or almost total parotidectomy was necessary to extirpate it, this procedure was performed; and in such instances it was often necessary to include extraparotid tissue such as skin, fat, fascia or muscle in the excision.

In all cases the facial nerve was isolated, and always at one point only—where the main stem emerged from the stylomastoid foramen. None of the other avenues of approach for isolation of the facial nerve branches was utilized in this series of cases. In previously untreated cases, regardless of the histologic diagnosis or size of the tumor, the facial nerve was never sacrificed—with the one exception of cases of infiltrating nonencapsulated malignant tumor wherein the facial nerve was embedded within the substance of the spreading tumor. Even in such cases, unless the surgeon is prepared to remove the adjacent condemned areas such as the masseter muscle and possibly the auricle, the external auditory canal and part of the mandible and mastoid,

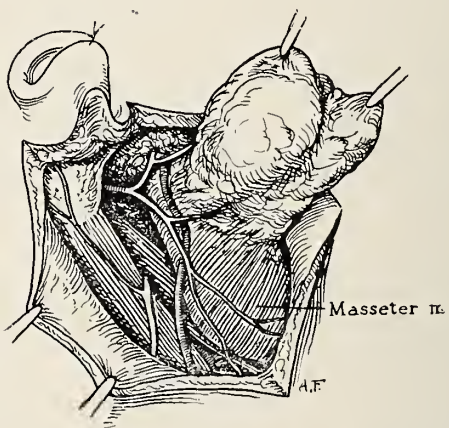

Figure 4.—While dissecting out the branches of the facial nerve, the superficial lobe of the parotid is elevated with its contained tumor. Note that the posterior facial vein is usually deep to the facial nerve.

there is nothing to be gained by simply sacrificing the facial nerve and leaving all or some of these involved contiguous structures "in situ." Simply removing the facial nerve with the parotid under such circumstances adds nothing to the surgical extirpation of local disease of this type, except that it makes the operation much easier.

Since the majority of such infiltrating tumors are much more radiosensitive than the average "encapsulated" parotid tumor and since a very high proportion of them (50 to 75 per cent) metastasize at least to the regional lymph nodes, the preferable course (unless one is prepared to perform wide radical excision of the primary site as previously mentioned) would be to perform a radical neck dissection in continuity with removal of all of the parotid gland, saving the facial nerve. Thus postoperatively the surgeon presents the radiologist with a more limited field for radiation, namely the primary site. The presence of the facial nerve in this field will in no way minimize whatever success the radiologist may have. It is believed that such a combination of modalities offers a greater opportunity of success in cases of this type than the use of either alone. This combined surgical and radiologic treatment was carried out in four cases in the present series.

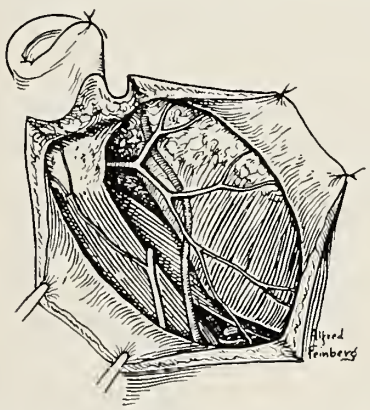

Figure 5.—If the tumor is in the deep lobe, the superficial lobe must first be removed as shown in Figure 4 and then the diseased deep lobe may be removed from beneath the facial nerve by elevating or spreading the branches.

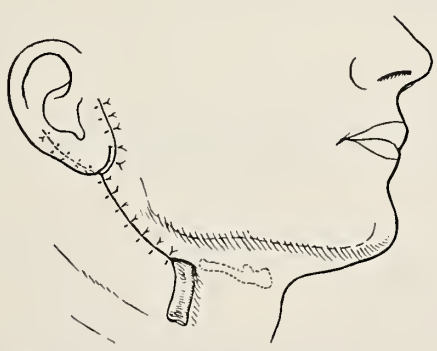

Figure 6.—Closure, showing site of drain.

The "Y" skin incision with the "hub" of the incision immediately below the lobe of the ear was used in all cases in this series.

The external carotid artery was ligated in continuity whenever it was felt that as bloodless a field as possible was necessary to avoid injury while locating the main stem of the facial nerve. This was particularly helpful in cases of large or incarcerated tumors of the pterygoid extension of the superficial lobe or in tumors of the deep lobe and in recurrent cases. The procedure can be performed through the same incision by extending the submandibular arm several centimeters toward the hyoid bone. The theoretical disadvantage of such ligation—that is, that it would interfere with the clean performance of neck dissection later, if that were indicated—can be dismissed as being of little importance when one considers that the incidence of subsequent cervical node involvement in such cases is less than 1 per cent.

When the preauricular area of the parotid gland is approached during the dissection, careful search is made for large tributaries of Stensen's duct. When these tributaries are isolated and transected, the cut distal ends are tied with fine silk to reduce the possibility of prolonged fistula formation.

Elective radical neck dissection was never performed, as fewer than 1 per cent of these tumors ever spread to regional lymph nodes after the primary lesion was controlled. In cases in which the homolateral cervical lymph nodes were involved and in all cases of infiltrating primary lesions, therapeutic radical neck dissection was performed either in continuity if the involvement was known at the time of operation or as a second stage when involvement became manifest later.

RESULTS

In the 218 cases of parotid tumor 121 were mixed tumors, 29 mucoepidermoid tumors and 18 Warthin's tumors. The present analysis deals with those cases. The tumors of other categories were too few in number for valid analysis (Table 1).

The age range of patients with mixed and mucoepidermoid tumors was from 16 to 82 years; of those with Warthin's tumor, 48 to 83 years (Table 2). The incidence of Warthin's tumor was considerably higher in men than in women; for mixed and mucoepidermoid tumors the converse was true (Table 3). Warthin's tumors were located predominantly in the lower pole of the superficial lobe of the parotid and only 11 per cent in the deep lobe; the mixed and mucoepidermoid tumors were in the

lower pole in a considerably smaller proportion of cases (Table 4). These data raise strong suspicion of a Warthin's tumor if the patient is an elderly man and the lesion is "encapsulated," is located at the lower pole of the parotid, and especially if, in addition, it is somewhat soft and varies in size from time to time.

For removal of the tumors, subtotal parotidectomy was done in 128 of the 168 cases and total parotidectomy in 40 cases (Table 5). In only seven instances was radical neck dissection performed in continuity because of the presence of clinically involved nodes or an infiltrating primary tumor. In one instance a staged procedure was done. In that case there was no clinical evidence of cervical involvement, but subsequently there was found to be metastatic extension to a cervical node in proximity to the lower pole of the superficial lobe of the parotid gland, where an "encapsulated" mucoepidermoid tumor was located.

In no case in the series was there accidental injury of the main stem or a major branch of the facial nerve. In six cases deliberate transection of the main stem was done, in four of them because of presurgical paralysis and in two because of intimate tangling of the nerve in the crevices of huge recurrent tumors (Table 6). The latter were really multicentric foci of recurrent tumors which became fused in conglomerate masses, trapping the nerve branches adhesively within the substance of the entire blob.

TABLE 1.—*Description of Parotid Tumors (218 Cases)*

Kind of Tumor	No. of Cases	Primary Site
MALIGNANT TUMORS (186 CASES)		
A. Primary (160 cases):		
1. Mixed tumors	121	
2. Mucoepidermoid tumors	29	
3. Acinic cell tumors	2	
4. Lymphomas	8*	
Lymphosarcoma	5	
Giant follicular lymphoma	1	
Hodgkin's disease	1	
Lymphatic leukemia	1	
B. Secondary (26 cases):		
1. Metastatic (15 cases):		
(a) Melanoma	11	Skin
(b) Squamous cell carcinoma	2	Ear, tonsil
(c) Lymphosarcoma	1	Tonsil
(d) Fibrosarcoma	1	Orbit
2. Direct extension (11 cases):		
(a) Squamous cell carcinoma		Ear, cheek, external auditory canal
(b) Basal cell carcinoma		Ear
(c) Adenocystic carcinoma		Cheek, skin appendage
(d) Ceruminous adenocarcinoma		Ear canal
(e) Fibrosarcoma		Mandible
(f) Rhabdomyosarcoma		Temporal muscle
BENIGN TUMORS (32 CASES)		
1. Warthin's tumors (papillary cystadenolymphomatosum)	18	
2. Benign lymphoepithelioma (Godwin)	3	
3. Hemangioma	2	
4. Lipoma	4	
5. Epithelial cyst	5	

*The lymphomas in this primary group were invariably within peri- or intraparotid lymph nodes without clinical evidence of disease elsewhere.

TABLE 2.—*Data on Age of Patients in Relation to Kind of Tumor*

	No. of Cases	Age of Patient (Years) Range	Average
Mixed tumor	121	16 to 76	46
Mucoepidermoid tumor	29	18 to 82	50
Warthin's tumor	18	48 to 83	65

TABLE 3.—*Relation of Kind of Tumor to Sex of Patient*

	No. of Cases	Male (Per Cent)	Female (Per Cent)
Mixed tumor	121	30	70
Mucoepidermoid tumor	29	38	62
Warthin's tumor	18	72	28

TABLE 4.—*Location of Various Kinds of Parotid Tumors*

	(Per Cent of Total Number of Each Kind)			
	Superficial Lobe			Deep Lobe
	Preauricular Area	Lower Pole	Pterygoid Extension	Includes Intra-oral and Duct Lesions
Mixed tumor	14	23	33	30
Mucoepidermoid tumor	21	17	24	38
Warthin's tumor	6	72	11	11

TABLE 5.—*Data on Kinds of Operations Used in Dealing with Various Kinds of Parotid Tumors*

	No. of Cases	Kind of Operation: Parotidectomy Subtotal	Parotidectomy Total	Neck Dissection In Continuity	Neck Dissection Staged
Mixed tumor	121	98	23	2	1
Mucoepidermoid tumor	29	13	16	5	0
Warthin's tumor	18	17	1	0	0
		128	40	7	1

TABLE 6.—*Data on Postsurgical Paralysis in Cases in Which Facial Nerve Was Transected*

	No. of Cases	Presurgical Paralysis	Postsurgical Result
Total transection	6	4	Two permanent
Buccal transection	9	0	Total recovery in 17 to 450 days
Mandibular transection	7	1	Five recovered in 120 to 600 days; 1 permanent

This never occurs with previously untreated "encapsulated" tumors, even large ones, because the nerve branches in such instances are either stretched over the surface of the mass or, at the most, embedded in a crevice of the nodular tumor and separated from it by an easily removed specific fascial layer. In addition nine smaller buccal branches and seven smaller mandibular branches were deliberately transected in recurrent cases because of the increased possibility of further recurrences, the intimate adherence to these nerves and the apparent unimportance of these branches. The estimate that they were unimportant was borne out by the fact that in all but one instance function returned completely in two weeks to two years.

Salivary fistula occurred in only 6.5 per cent of patients who had subtotal parotidectomy and all cleared spontaneously in 15 to 87 days. Searching for and tying off major duct branches with nonabsorbable fine silk may have been an important factor (Table 7).

TABLE 7.—*Data on Occurrence of Salivary Fistulae in 168 Cases of Parotidectomy*

Occurred in 11 cases (6.5 per cent).
Extent of operation—8 subtotal parotidectomies; 3 total.
Previous operation—3 cases.
Location of tumor—Preauricular area 4; lower pole 4; pterygoid extension 2; deep lobe 1.
Duration of fistula—15 to 87 days; average—32 days.

TABLE 8.—*Data on Development of Auriculotemporal Syndrome in 237 Cases of Parotidectomy*

Incidence:
24 per cent of all cases.
20 per cent of subtotal parotidectomies.
34 per cent of total parotidectomies.

Onset:
Two to 48 months after operation.
(Average—11 months).

TABLE 9.—*Data on Metastasis from Parotid Tumors of Various Kinds*

	No. of Cases	No. with Metastasis	Metastasis to: Cervical Nodes	Metastasis to: Distant Lung, Bones
Mixed tumor	121	3	1	3
Mucoepidermoid tumor	29	10	10	5
Warthin's tumor	18	0	0	0

TABLE 10.—*Data on Death from Disease in 168 Cases of Parotid Tumor in Which Operation Was Done*

Kind of tumor:
(a) Mixed tumor, 2 cases (1.5 per cent).
(b) Mucoepidermoid tumor, 7 cases (24 per cent).

Areas involved:
(a) Residual disease in parotid, 6 cases.
(b) Regional nodes involved, 8 cases.
(c) Distant metastasis, 6 cases.

The auriculotemporal syndrome was, surprisingly, found in 24 per cent of the entire series* (Table 8).

After many consultations with the group of pathologists involved, it was decided that the criteria for diagnosis of benign mixed tumors and low-grade mucoepidermoid tumors were either so nonspecific or borderline that from a clinical standpoint still other important variables would be eliminated by accepting all of these lesions as malignant. The impression was gained that genetically all the mixed and mucoepidermoid tumors had a common genesis, differing only in their growth potential, with the mucoepidermoid tumors representing the more malignant types. The Warthin tumor was considered to be a benign lesion, often multicentric and bilateral. Further, from a clinical standpoint, the management of these tumors was dependent on only two factors. First, whether the primary lesion was "encapsulated" or infiltrating, and, second, whether or not metastasis was present. In this series of cases nothing occurred during the one to nine-year period of observation to warrant a change in the utilization of this simplified classification as a basis for management. Using this clinical classification, it was found (Table 9) that a 0.8 per cent of the mixed and 32 per cent of the mucoepidermoid tumors metastasized to the cervical lymph nodes, and in all cases this occurred preoperatively. Distant metastasis, primarily to the lungs and bones, occurred in 2.5 per cent of the cases of mixed tumors and in 16 per cent of the cases of mucoepidermoid tumors—postoperatively in all cases. As was expected metastasis did not occur in cases of Warthin's tumor.

That patients die from parotid tumors is well known. In the present series there was a 1.6 per cent mortality in the mixed tumor group and 24 per cent in the mucoepidermoid tumors (Table 10). Death was due to distant metastasis in six of the nine cases and to the local effects of the disease in the other three cases.

Perhaps the most important criterion upon which the effectiveness of this method of management rests is that of recurrence in the primary site. McFarland[5] and others[1,2,4,9,10] showed that with simple enucleation, curettage, radiation or any combination of these therapeutic measures the local (parotid area) recurrence rate is from 15 to 65 per cent. The higher figure is perhaps the more dependable.

*The factors involved in this interesting sequela will be discussed in a separate paper.

TABLE 11.—*Local Recurrence*

Mixed tumor:		
Primary cases	(89)	1%
Cases previously operated on	(32)	18%
Mucoepidermoid tumor:		
Primary cases	(14)	None
Cases previously operated on	(15)	13%

since it is based on a study of a large group of cases over a long period of time.[5] In the present series (Table 11) there was only one local recurrence in a series of 103 cases, not previously treated, of mixed and mucoepidermoid tumors observed for a period of one to nine years after operation. On the other hand, with the same and even more extensive management applied to previously treated patients who had recurrence, the subsequent recurrence rate was 17 per cent.

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Percutaneous Trans-splenic Portal Venography

Applications and Hazards

E. ROBERT HEITZMAN, JR., *M.D.*, USAF, and
LEO G. RIGLER, *M.D.*, Minneapolis

• **Trans-splenic percutaneous portavenography is a useful and relatively simple roentgen examination. Although infrequent, splenic hemorrhage and delayed splenic rupture sometimes do occur after splenic puncture. Hence the procedure should be used only with provision for immediate operation in case of hemorrhage.**

The method is invaluable in the demonstration of intrahepatic and extrahepatic portal obstruction, gastric and esophageal varices. With it, the size of the portasplenic veins and the degree of portal hypertension can be estimated.

EFFORTS TO MAKE the liver and spleen opaque to roentgen rays by means of contrast media have had a long and relatively unsuccessful history. The size and shape of the liver and spleen can be demonstrated by direct radiographic studies or by pneumoperitoneum but the internal structure of these two organs, their vascular supply and the changes which result from pathological processes cannot be clearly estimated in this way.

The introduction of cholecystography gave hope that the contrast substance used for demonstration of the gallbladder would also permit visualization of the internal structure of the liver, but the amount of contrast medium was too small in proportion to the large size of the liver and the hope was not realized. Various other methods for the study of the biliary duct system itself have been introduced and it is now possible to study adequately this portion of the liver by means of roentgen examination.

The introduction into the blood stream of a stable colloidal substance, Thorotrast,® which has a high opacity to roentgen rays and is absorbed by the reticuloendothelial cells of the liver and spleen, resulted in a brilliant demonstration of the size, shape, position and internal structure of these two organs. By this means, tumors of the liver, cirrhosis and various other diseases could be effectively portrayed. Unfortunately, this substance is slightly radioactive, but even more importantly, remains almost permanently within the liver. There is some evidence, in fact, that it may be slightly carcinogenic. Therefore, it has fallen into disuse for the roentgen study of this organ. Iodine has been put into various other molecules to make them radiopaque, but when injected as colloids all have shown toxic effects and they have not been widely used.

In 1950, Moore and Bridenbaugh[15] reported observations on a method of roentgenographically demonstrating the portal circulation by injection of 70 per cent Diodrast® into the right gastroepiploic vein during an abdominal operation. The right side of the portal circulation and the distribution of the branches of the portal vein within the liver were very effectively demonstrated. Furthermore, films made at suitable intervals after the introduction of a contrast substance directly into the portal circulation indicated that an opacification of the parenchyma of the liver could be produced by this method and some studies of the internal structure of the liver were made. Carcinomatous metastasis was thus successfully exhibited in the roentgenogram. This method is sharply limited since it can be used only when the abdominal wall is open.

Bierman and associates[3,21] demonstrated that it was possible to accomplish portal venipuncture by a percutaneous transhepatic approach. Likewise, in this way the portal circulation in the liver could be visualized in a roentgenogram. The method, however, has not attained wide clinical acceptance, perhaps because of reluctance to puncture the liver blindly.

Rigler, Olfelt, and Krumbach[17] were able to produce opacification of the liver through the medium of abdominal aortography. The liver was filled with contrast medium first through the hepatic and splenic arteries. Contrast also passed into the mesenteric vessels and thus was returned to the liver in the portal circulation. Films made at suitable intervals after injection exhibited an opacified liver in which various disease processes, especially metastasis, could be demonstrated. The method requires serial roentgenography and involves the hazard which attends abdominal aortography.

In 1951, Abeatici and Campi[1] extended the usefulness of the procedure of contrast visualization of the portal circulation by the development of a method of percutaneous splenic puncture, introducing the contrast material directly through the splenic

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pulp into the splenic vein and thus into the portal circulation. The excellent anatomic demonstrations which they achieved stimulated interest in the procedure and since that time many articles on this subject have appeared in the literature.[2,4,12,14,16,19,20] The largest series have come from European investigators who have felt that much information can be gained from this examination at a relatively low risk to the patient. A smaller series has appeared in American literature describing portal vein opacification by percutaneous transsplenic and transhepatic approaches and by direct injection of the splenic vein at operation. It is our purpose to add to our early experience with direct injection of the portal vein at operation, a later experience with percutaneous trans-splenic portal venography as a method of evaluation of portal hypertension and to mention some possible avenues of future application.

The method of percutaneous splenic puncture we used is similar to the methods used by earlier workers. However, we have felt that serious hemorrhage was a definite possibility following puncture of the spleen despite observations by others that this is a rare complication. To minimize this danger and to evaluate the degree of hemorrhage resulting, in all of cases puncture was done immediately preceding operation to carry out portacaval or lienorenal shunt. In most of the cases the patient was under general anesthesia at the time of puncture. In three cases local anesthesia was used. Having done puncture with patients both prone and supine, we believe successful entry into the spleen is facilitated when the patient is supine. A three-inch 20 gauge spinal needle is inserted through the left 9th or 10th intercostal space at the midaxillary line, the needle being directed slightly dorsad and cephalad. With endotracheal anesthesia, it is possible to have respiration held in the phase of expiration as the needle is advanced. Since the needle may cross the pleural space in some instances, this will reduce the possibility of pulmonary trauma. As the spleen is met, definite resistance can be felt. With patients not anesthetized, some pain may occur as the splenic capsule is penetrated. The needle is then advanced 2 to 3 cm., depending on the thickness of the spleen. Aspiration of a small quantity of blood indicates a successful puncture. This is followed by the injection of 20 cc. of 70 per cent Urokon® as rapidly as possible, using a 20 cc. luer-lock syringe. In patients not anesthetized, considerable pain follows injection, but it usually subsides in about 15 minutes. Little pain was experienced by one patient in whom a faulty puncture resulted in the injection of 20 cc. of the contrast medium into the peritoneal cavity. In about half of the cases in which we have used the method, entrance of the mass of Urokon into the

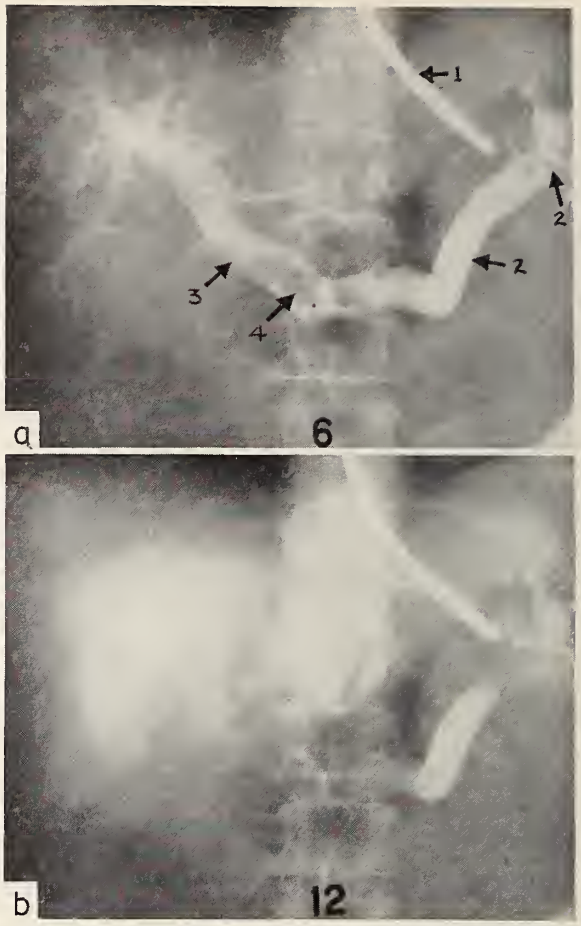

Figure 1.—Splenoportagram in a patient suspected of portal hypertension but now considered normal. *Above:* Film taken immediately after injection. (1) Gastric suction tube; (2) splenic vein; (3) portal vein; (4) decreased density resulting from dilution by noncontrast blood from mesenteric vein. The intrahepatic branches of the portal vein are well seen within the liver shadow. *Below:* Twelve seconds after injection. Some residual contrast still remains in the spleen and in the splenic vein. The opacification of the liver resulting from the passage of contrast blood through the sinusoids is well shown.

vascular system caused transient depression in blood pressure. None was serious and no other splenic complications occurred. Films of the upper abdomen, including the liver and a portion of the spleen, have been made at the rate of one per second, using an automatic rapid filming device. We have also done this by use of ordinary cassettes, changed manually, to obtain serial films at 4-second intervals over a period of about 30 seconds.

Successful splenic injection (Figure 1) was accomplished in all but two cases. The failures were early in our experience before the present technique was fully evolved. The majority of patients had enlargement of the spleen. When splenic enlargement is present, as shown by conventional abdominal films or by palpation, successful puncture should be

Figure 2.—Extravasation of contrast medium along the capsule of the spleen in a case of massive splenomegaly from Banti's disease. Because of this finding, the procedure was discontinued. At operation an hour and a half later, about 500 cc. of fresh blood was found in the peritoneal cavity. (1) Needle; (2) contrast medium in splenic pulp; (3) collateral circulation; (4) subcapsular contrast medium.

Figure 3.—Perisplenic hemorrhage following splenic puncture. The patient had cirrhosis of the liver and varices. There was also a hiatus hernia. (1) Contrast medium in peritoneal cavity and surrounding the spleen as a result of extravasation; (2) collateral circulation; (3) very poorly visualized portal vein; (4) small, atrophic liver.

possible in practically all cases. We obtained an adequate study on a child whose spleen was found to weigh 100 gm., but it would be difficult to get a needle into a child's spleen unless it were enlarged. This is also the impression of Field and Irwin[10] and many others who have done splenic puncture many times.

In all but one of our cases, hemorrhage of the splenic puncture site, when seen by the surgeon one to two hours after the injection, was found to be minimal and was considered clinically insignificant. Occasionally it was found that no blood at all had escaped into the peritoneal cavity. In one case, however, the site of needle entry was actively oozing when seen at operation an hour and a half later. About 500 cc. of blood was present in the peritoneal cavity and an 8 mm. laceration was found in the spleen, presumably owing to respiratory motion while the needle was against a rib at the time of injection. In this case films had shown reflux of contrast material from the puncture site coating the surface of the spleen (Figure 2). This condition was also observed by Leger and Proux.[13] They did not report the degree of associated splenic hemorrhage. Cooper and co-workers[7] reported a case in which some 1,000 cc. of free blood was found in the peritoneal cavity at operation. We feel that these experiences clearly point out one of the dangers of this procedure and that these hazards should be fully appreciated. It should be emphasized that in many cases in which portacaval or lienorenal shunt is contemplated there may be factors that predispose to bleeding—among them low prothrombin levels secondary to liver disease, thrombocytopenia associated with splenomegaly, and elevated portal venous pressure. Another case of splenic bleeding is shown in Figure 3.

Since splenectomy was performed immediately in all our cases, the chance of late splenic rupture from a subcapsular hematoma cannot be evaluated. This, too, may prove a definite hazard as was shown by a case reported by Walker and co-workers[22] in which the spleen had to be removed because of rupture three days after splenic puncture.

In most of the cases in our series the indication for portal venography was the need for evaluation of the anatomic features of the portal circulation in order to determine what surgical approach to use for the correction of portal hypertension. When it is necessary to decide whether a portacaval or lienorenal shunt should be done, the surgeon wishes to

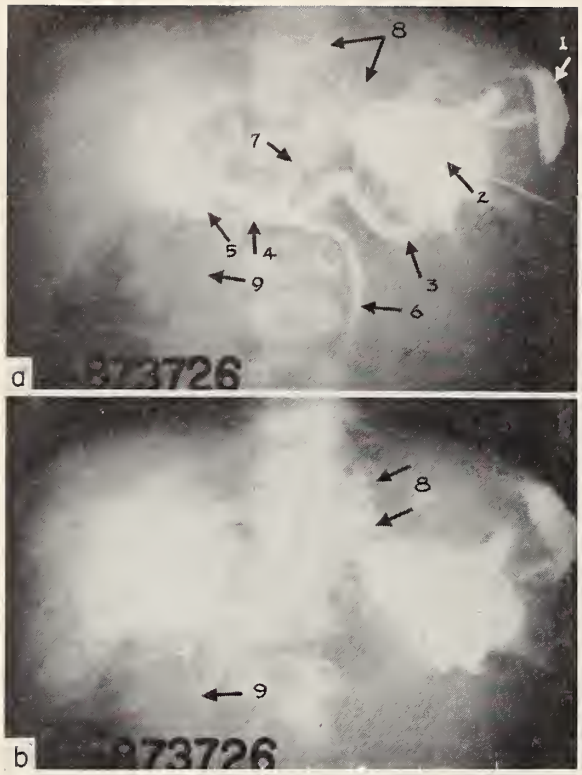

Figure 4.—Splenoportagram in a 2-year-old child with hematemesis and melena from cavernous transformation of the portal vein. *Above:* Seven seconds after injection. (1) Extracapsular contrast medium from first attempt to inject; (2) splenic pulp filled with contrast from second injection; (3) splenic vein; (4) portal vein; (5) cavernous transformation of portal vein; (6) retrograde filling of inferior mesenteric as a result of high portal pressure; (7) dilated coronary vein; (8) gastric and esophageal varices; (9) right kidney pelvis, excreting contrast from first injection. (The left was not seen, because of hydronephrosis.) *Below:* Fourteen seconds after injection. Some of the contrast has entered the veins of the liver but pronounced delay is shown.

Figure 5.—Thrombosis of splenic vein. *Above:* Immediately after injection. (1) Splenic pulp; (2) dilated splenic vein; (3) obstruction at point of thrombosis; (4) retrograde filling of inferior mesenteric vein. *Below:* Same case, ten seconds after injection. No advance of the contrast can be seen in the portal vein. Note the very extensive collateral circulation. (5) Esophageal and gastric varices; (6) collateral veins.

know the size and patency of the splenic and portal veins. If an extrahepatic block exists, knowledge of its nature and location is essential. An estimation of portal pressure and the demonstration of areas of major anastomotic channels may be very helpful. Forearmed with this information, the surgeon can make a left or right-sided abdominal incision with assurance and proceed with a better conception of the problem at hand. Figure 4 demonstrates the findings in a two-year-old boy with lethargy, melena and hematemesis. The film showed an extrahepatic portal obstruction in the form of a cavernous transformation of the portal vein. Esophageal varices were also outlined. Some extravasation of contrast medium occurred. With the knowledge of the location of this extrahepatic block and that the splenic vein was sufficiently large, lienorenal shunt was carried out and the child made an uneventful recovery.

Portal venograms in cases in which portal vein thrombosis was suspected have been reported by Gvosdanovic and co-workers,[11] Cacciari and Frassinetti,[5] and Dogliotti and Abeatici.[9] Figure 5 shows a roentgenogram similar to that presented by Gvosdanovic. In this case the diagnosis was not definitely confirmed at operation, but the clinical conditions were considered typical and, since the liver biopsy showed no evidence of disease there, the portal obstruction was thought to be in the portal vein itself. Since the location of the portal obstruction as demonstrated by venography, was such as to preclude portacaval anastomosis, another approach was used.

Gastric and esophageal varices are usually opacified to show clearly—better than by barium in the esophagus (Figure 6).

Figure 6 shows the roentgenograms made after portal venography in a 14-year-old girl with hematemesis, melena and abdominal pain. The gastric and esophageal varices are well shown. The portal pressure of 37 cm. of water fell to 27 cm. after a lienorenal shunt was completed. Biopsy showed congenital cystic disease of the liver. At operation portal venography was accomplished by direct in-

jection. Cystic disease of the liver was evident (Figure 7). The films ruled out extrahepatic block, giving the surgeon added confidence in his approach. Other areas rich in vessels for anastomosis are the region of the short gastric veins and the region in and about the splenic capsule. Campi and Abeatici[6] and Dogliotti and Abeatici[9] reported successful demonstration of persistent umbilical and paraumbilical veins in cases of Cruveilhier-Baumgarten syndrome.

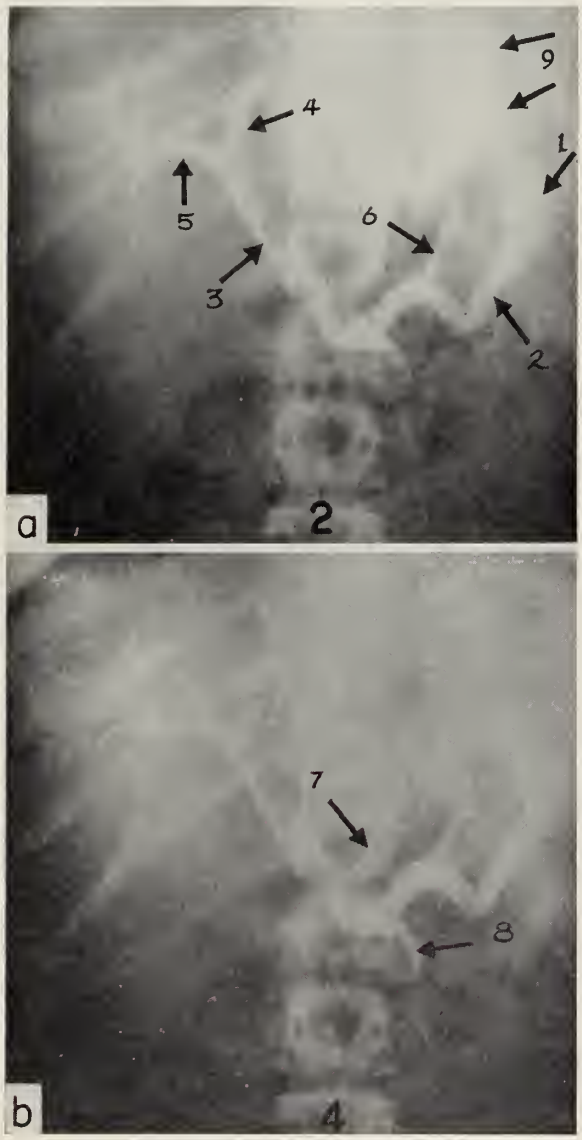

Figure 6.—Splenoportagraphy in a case of cystic disease of the liver. *Above:* Film taken four seconds after injection. *Below:* Four seconds later. The patient was one of twins, both of whom had hematemesis and enlarged spleen. (1) Splenic pulp; (2) splenic vein; (3) portal vein; (4) left hepatic branch; (5) right branch; (6) short gastric vein; (7) coronary vein; (8) retrograde filling of inferior mesenteric vein; (9) esophageal and gastric varices. The passage through the liver was slow and the branching was most unusual, suggesting some intrinsic process within the liver. The last film was not taken late enough to show opacification of liver parenchyma.

In those of our cases in which portal pressure was high at the time of operation, considerable retrograde filling of the inferior mesenteric vein was noted (Figures 4, 6). Cooper and co-workers[7] also observed this phenomenon.

Trans-splenic hepatography should be useful not only when there is question of portal obstruction, but also to study the gross structure of the liver. Figure 1 shows how well the vessels can sometimes be shown. Primary or metastatic tumors could be detected by distortion of this vascular pattern or defects in general opacification. Metastatic lesions have in fact been so diagnosed when portagrams were made by injecting the vein at operation (Moore and Bridenbaugh[15]) and also after abdominal aortography (Rigler and Olfelt[18]).

There are numerous other conditions in which splenoportagraphy is of great value. Among these are carcinoma of the body of the pancreas, pancreatic cyst, compression of the portal vein by nodes in the hepatic hilus, and various congenital anomalies, all of which have been reported by other investigators.

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Figure 7.—Same patient as in Figure 6. Operative portal venogram. (1) Catheter in gastroepiploic vein; (2) splenic vein; (3) portal vein; (4) esophageal varices; (5) defect within opacified liver shows cystic structure, the arrow pointing to one of the larger cysts; (6) contrast excreted through kidney pelves, which are hydronephrotic.

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Splenoportagraphy in Portal Hypertension

Its Value in Selecting the Operative Procedure of Choice

WILLIAM P. MIKKELSEN, *M.D.*, and
ARTHUR C. PATTISON, *M.D.*, Los Angeles

• Splenoportagraphy has become an almost indispensable adjunct to the surgical management of portal hypertension. In many instances it will provide the basis for the selection of the operative procedure. Certain instances of intrahepatic portal hypertension due to cirrhosis that might better be managed by splenorenal shunt rather than by the generally preferred method of direct end-to-side portacaval shunt may be determined by this procedure. The procedure finds its greatest application in the accurate delineation of the three major types of extrahepatic portal hypertension, each of which demands a different surgical approach.

X-RAY VISUALIZATION of the portal venous system has become an almost indispensable adjunct to the surgical management of portal hypertension. Splenoportagraphy, when properly carried out, clearly delineates this system and avoids tedious and sometimes hazardous surgical dissection. Moreover, extensive surgical dissection in these cases frequently does not adequately uncover the full extent of the disease process. Splenoportagraphy, in many cases of portal hypertension, will provide the basis for the selection of the operative procedure.

Splenoportagraphy was introduced by Abeatici and Campi in 1951.[1] Their technique, as well as that of others,[3,4] involves the performance of the test in the x-ray department by means of percutaneous splenic injection of radiopaque material under local anesthetic skin infiltration.

It has been difficult for us to understand why more complications have not been reported by this technique. Early in our experience[5] we encountered significant splenic hemorrhage and now employ the procedure only in the operating room after the abdomen has been opened. This permits direct tamponade of the splenic puncture site after completion of the injection. Further, in our experience, a preoperative splenoportagram is rarely required. We do not consider this test to be of significant value in the decision as to whether or not operation is indicated. This information is obtained by the multitude of clinical features that characterize bleeding esophagogastric varices. Thus, its use is primarily for delineating the anatomical features of the portal hypertension and thus determining the operative procedure most likely to succeed. Positioning of the patient and placement of the incision are admittedly facilitated by a preoperative portagram. The lack of this information has, however, not proved a significant handicap.

The recommended initial incision is a transverse upper abdominal one that permits exploration and splenoportagraphy. The incision is then extended into the right or left chest as determined by the

Figure 1.—Splenoportagram of 12-year-old girl with posthepatitic cirrhosis. Massive bleeding from esophagastric varices and pronounced hypersplenism were clinical features. A splenic vein, perhaps unsatisfactory for an adequate splenorenal shunt, is demonstrated.

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Figure 2.—Splenoportagram of 44-year-old man with posthepatitic cirrhosis. Hypersplenism was the dominant clinical manifestation. Gastrointestinal bleeding was minimal. A splenic vein suitable for splenorenal shunt is demonstrated.

Figure 3.—Splenoportagram of 46-year-old man with posthepatitic cirrhosis. Minimal collateral circulation is noted and the finer portal radicals within the liver are clearly visualized. Complete diversion of the portal blood flow by end-to-side portacaval shunt resulted in a considerable degree of hepatic decompensation.

information obtained. In the course of this presentation, illustrative examples of the need and value of splenoportagraphy will be presented.

INTRAHEPATIC PORTAL HYPERTENSION

Although the surgical procedures designed to alleviate the complications of portal hypertension are not standardized, certain principles of such operations are generally accepted. When the primary etiologic mechanism for the portal hypertension exists within the liver and the entire portal venous tree is patent, an adequate shunt from this venous system to the caval system is the operation most likely to be of benefit. This may be accomplished by a direct portacaval shunt or by the indirect method of splenectomy and splenorenal anastomosis. The relative merits of these two operations will not be argued. Nevertheless, our experience has led us to prefer the direct portacaval shunt which we have now performed in somewhat more than 100 patients. Also we prefer to completely divide the portal vein and accomplish the shunt in an end-to-side manner. We have not employed splenoportagraphy routinely in such cirrhotic patients. Palpation of the hepatoduodenal ligament at the time of operation will usually reveal the portal vein to be taut, distended and patent. If there is any doubt in this regard there is no hesitancy to perform splenoportagraphy during operation.

Occasionally for a patient with intrahepatic portal hypertension who has a patent portal venous tree, a splenorenal anastomosis will be preferred. This situation is encountered when significant hypersplenism as manifested by severe pancytopenia is present and splenectomy would seem desirable. In many such situations, however, it must be recognized that relief of the hypersplenism will occur when portal decompression is accomplished by direct portacaval anastomosis even though the spleen is not removed. The efficiency of a venous shunt in eliminating portal hypertension depends to a great extent upon the size of the afferent vessel and the size of the anastomosis. Thus, in choosing a splenorenal anastomosis over a direct portacaval anastomosis, it is essential that the splenic vein be of appropriate size. Usually the primary purpose of these operations is to alleviate the threat of life-endangering hemorrhage from esophagogastric varices. One must thus weigh carefully these two factors when dealing with a patient with intrahepatic portal hypertension and hypersplenism.

This problem is exemplified by a brief account of two representative patients. In both patients severe pancytopenia secondary to intrahepatic portal hypertension, due to cirrhosis was manifest. The first patient was a 12-year-old girl who had bled massively on two occasions within three weeks preceding operation. Pronounced leukopenia and thrombocytopenia were present. Upon examination of the splenoportagram it was noted that the splenic hilar veins did not fuse to form the common splenic vein for quite a distance from the spleen (Figure 1). This suggested there might be difficulty dissecting out a sufficiently large splenic vein for anastomosis and hence the possibility that a graft might

be required. In our opinion, available autogenous grafts are not of sufficient diameter to guarantee a satisfactory shunt. Our primary concern with this patient was to relieve the portal hypertension and control the bleeding. Thus a direct portacaval shunt was performed and the portal pressure was reduced to a normal range. In five months of observation after operation she had no further bleeding and the depression in circulating cellular elements steadily improved but had not yet risen to normal levels at the time of last observation.

The second patient was a 44-year-old man who also had pronounced pancytopenia and thrombocytopenia. Gastrointestinal bleeding had occurred but had never been massive. A splenoportagram (Figure 2) showed a large splenic vein, eminently suitable for anastomosis. Of major concern in this patient was the control of hypersplenism. A splenectomy followed by splenorenal shunt was decided upon. A rather poor reduction in portal pressure was obtained. The circulating cellular elements returned immediately to normal levels, where they remained. There was no further gastrointestinal bleeding.

Another way in which splenoportagraphic delineation may help in surgical consideration of a case of intrahepatic portal hypertension is in estimating the amount of blood flow through the liver that is contributed by the portal vein. In the usual cirrhotic patient, the total liver blood flow is reduced about 50 per cent. This occurs in spite of the apparent pronounced increase in arterial blood that reaches the liver. The assumption is that reduction in flow of blood through the liver takes place primarily at the expense of the portal flow. It is reasonable to believe that rather significant differences may exist in this regard from one cirrhotic patient to another. If it could be determined beforehand that one was dealing with the unusual cirrhotic patient whose portal vein was contributing the majority of liver blood flow, the surgeon might be reluctant to completely divert this flow from the liver as is done in an end-to-side portacaval shunt.

When a splenoportagram fails to show significant collateral vessels and the finer portal radicals within the liver are clearly visualized, it is a justifiable interpretation that portal flow is rapid and liver obstruction is minimal. It may further be deduced in such a situation that the portal vein is contributing a significant amount of the total flow of blood through the liver. A preoperative indication that this problem may exist is presented when an esophagram or esophagoscopy fails to reveal significant varices in a cirrhotic patient who has bled. We now perform splenoportagraphy routinely in these patients and utilize splenorenal anastomosis if our preoperative suspicions are confirmed. Figure 3 is a splenoportagram in the case of such a patient, in whom a direct end-to-side portacaval shunt was done. Preoperative evaluation indicated this patient to be an excellent surgical candidate. The postoperative course was uneventful for two weeks and the patient was discharged from the hospital. He returned two weeks later with icterus and ascites. Liver function studies demonstrated significant impairment, much greater than might be anticipated from the effects of anesthetic and sur-

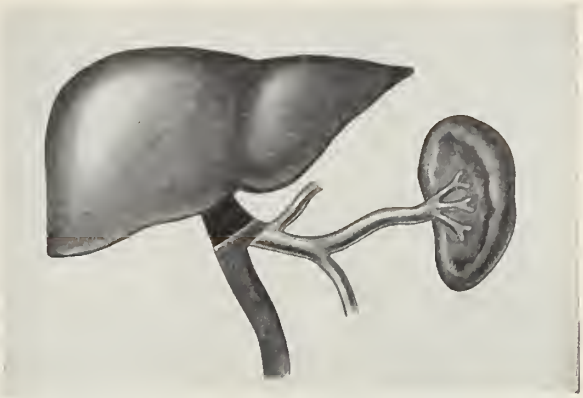

Figure 4.—Extrahepatic portal hypertension: Type No. 1. The portal vein alone or the portal and superior mesenteric veins are occluded. The splenic and coronary veins are patent.

Figure 5.—Splenoportagram of 34-year-old man with decided narrowing of the portal vein due to chronic pancreatitis localized to the head of the gland.

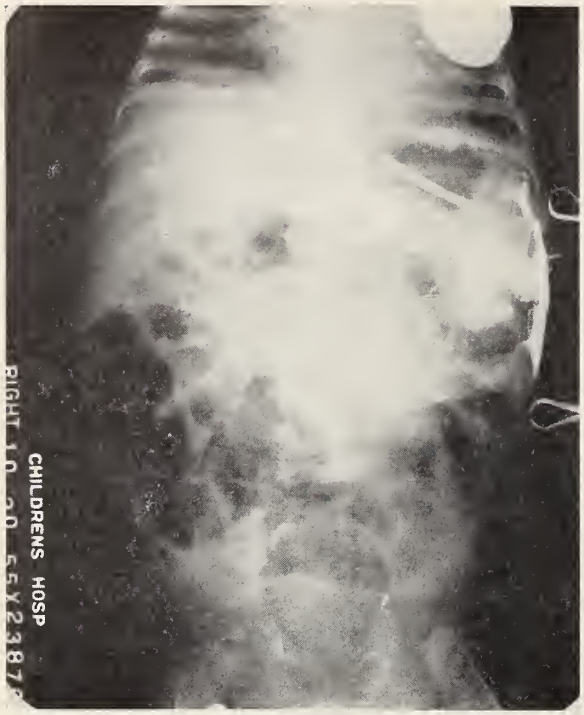

Figure 6.—Splenoportagram of nine-months-old infant. Neither the portal nor the superior mesenteric vein is visualized. A large coronary vein is apparent.

Figure 7.—Jejunal portagram in same infant as shown in Figure 6. Complete obliteration of both the portal and superior mesenteric veins is confirmed.

gical stress alone. The subsequent course was a slow but definite improvement. Perhaps in this patient this degree of hepatic decompensation would not have developed if splenorenal shunt had been done.

EXTRAHEPATIC PORTAL HYPERTENSION

Splenoportagraphy, though valuable in cirrhosis, finds its greatest use in delineation of the disease process in extrahepatic portal hypertension. In this disease, the pathologic process involves obstruction of the portal vein or one or more of its tributaries. The liver itself is normal. The site and extent of this venous obstructive process will determine the surgical approach. Although there are minor anatomical variations in the portal venous tree, from a therapeutic standpoint three significant variations of extrahepatic portal hypertension are encountered. For the sake of convenience, we have elected to label these as types 1, 2, and 3. Minor variations of these types will occasionally be encountered.

Type 1 (Figure 4): The portal vein alone or the portal and superior mesenteric veins are occluded. The splenic and coronary veins are patent. All of the splanchnic return blood flow is shunted to the caval system via inadequate collaterals. In this instance a direct portacaval shunt is impossible. A splenorenal shunt for this problem is the procedure most likely to result in decompression of the esophagogastric varices. Shunts using the superior

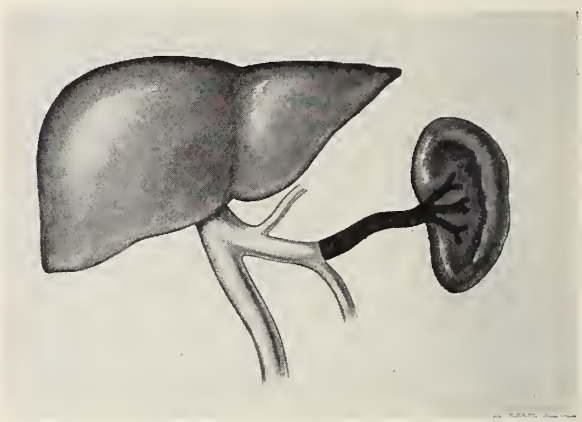

Figure 8.—Extrahepatic portal hypertension: Type No. 2. The splenic vein alone is thrombosed. The portal and superior mesenteric veins are patent.

mesenteric vein here, are unlikely to succeed since only the intestinal veins drained by this vessel will be decompressed. No relief will be afforded the venous return from the spleen, stomach or left colon.

Figure 5 is a splenoportagram taken in the case of a 34-year-old man with gastrointestinal bleeding and splenomegaly. The pronounced narrowing in the portal vein was due to chronic pancreatitis localized to the head of the gland. Splenorenal anastomosis successfully relieved the gastrointestinal bleeding.

Figure 6 is a splenoportagram in the case of a

Figure 9.—Splenoportagram of 56-year-old man. A huge collateral circumvents the splenic vein obstruction to outline normally patent superior mesenteric and portal veins.

nine-month-old infant, with thrombosis of both the portal and superior mesenteric veins which was secondary to omphalitis following birth. Splenorenal shunt was successfully carried out. When the initial splenoportagram shows obstruction in the splenic vein, as it did in this infant, it is essential to perform a secondary portagram (Figure 7) via a jejunal mesenteric vein. This procedure is required to ascertain the status of the superior mesenteric and portal veins. If the splenic vein alone is obstructed, a lesser operative procedure is indicated. This will be clarified in succeeding paragraphs.

Type 2 (Figure 8): The splenic vein alone is thrombosed. In cases of this type the venous return from the majority of the abdominal viscera is flowing unobstructed in a normal fashion through the superior mesenteric and portal veins. The venous return from the spleen and perhaps part of the stomach is the only segment obstructed. In this situation, splenectomy alone, will suffice. The contribution of splenic blood to the varices, here, is probably in the neighborhood of 80 per cent or more. Figure 9 is a splenoportagram in the case of a 56-year-old man who had severe bleeding from varices. It was noted that a greatly enlarged collateral vessel circumvented the splenic vein obstruction to outline normally patent superior mesenteric and portal veins. This extensive collateral, however, had included the azygos and hemi-azygos systems

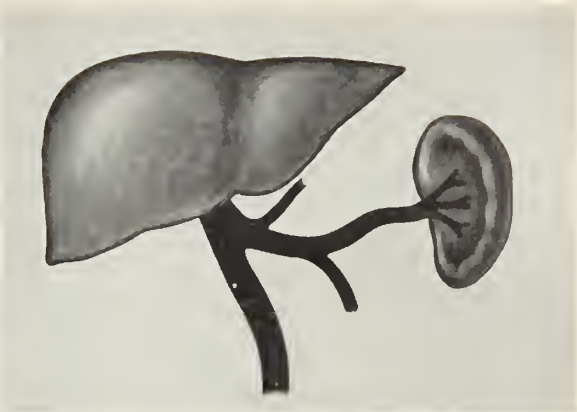

Figure 10.—Extrahepatic portal hypertension: Type No. 3. The major veins of the entire portal system are thrombosed.

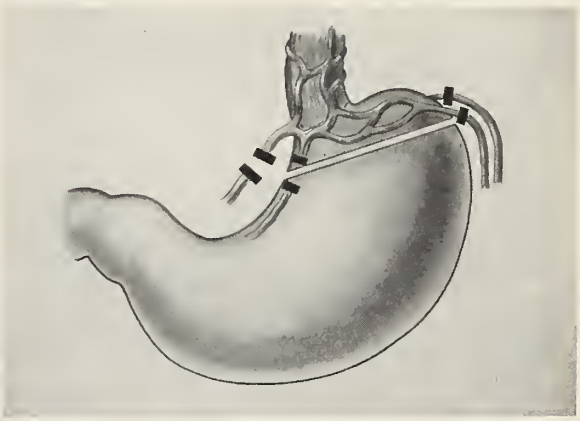

Figure 11.—Diagrammatic presentation of portal-azygos disconnection by division and immediate resuture of the gastric cardia.

in the mediastinum, resulting in esophagogastric varices. The etiologic process was a pseudocyst of the tail of the pancreas. No further bleeding occurred after splenectomy and distal pancreatectomy was carried out.

Type 3 (Figure 10): The major veins of the portal system are all thrombosed. No type of veno-venous shunt is possible in this situation. Shunts have been attempted between rather large collateral veins and the caval system, but they have failed since only a small segment of the splanchnic venous return was thus decompressed. In extrahepatic portal hypertension of this type it is necessary to operate directly on the varices. Three methods, each with minor variations, are available to accomplish this. The efficacy of each has yet to be determined. The three methods are segmental esophagogastrectomy, transesophageal ligation of the varices and portal azygos disconnection by transsection and resuture of the gastric cardia. Splenectomy may or may not be done as an adjunct to any of these pro-

Figure 12.—Splenoportagram of 62-year-old woman. None of the major tributaries of the portal circulation are visualized. The one significant vein seen is the gastroepiploic.

Figure 13.—Jejunal portagram of same patient shown in Figure 11. Neither the superior mesenteric nor the portal vein is visualized.

Figure 14.—Jejunal portagram of patient who had postsplenectomy bleeding. Collateral by-passing obliteration of portal, splenic and superior mesenteric veins is demonstrated.

cedures. However, many of these patients have already had splenectomy carried out for "Banti's syndrome."

At present we prefer portal azygos disconnection for the management of these patients (Figure 11). This procedure would seem to offer at least temporary control of the varices with a minimum of disturbing postoperative sequelae. The rationale of the operation stems from the recognition that esophageal varices are filled from the abdominal side of the diaphragm. Interruption of this flow permits the varices to collapse. How permanent this effect will be remains to be ascertained. Pyloroplasty is required as an adjunct to this procedure in order to permit adequate gastric drainage, since vagotomy is technically unavoidable. Fortunately, vagotomy is desirable, since it interrupts the cephalic phase of gastric secretion and reduces the acid secretion of the stomach. Pyloroplasty accomplishes a similar result by reducing the antral phase of gastric secretion. It is believed by many observers that acid-peptic erosion of the esophageal mucosa is the initiating factor in varix bleeding. Our experience with this procedure is limited to two recent satisfactory results. In a recent personal communication, Mr. N. C. Tanner of St. James Hospital, London, stated that he is observing eight patients who have had this operation. None has bled and none has significant gastrointestinal complaints. The longest period of follow-up in this series is four years. It is readily apparent that further appraisal of this procedure is required.

Our preference for portal azygos disconnection has developed from dissatisfaction with the first two procedures listed. In three of four patients we operated upon, segmental esophagogastrectomy was followed by disabling esophagitis. Perhaps a more extensive proximal gastrectomy would offer greater protection in this regard. This operation, however, is a major one and a significantly higher operative mortality must be anticipated.

We have performed transesophageal ligation of varices in five patients. Three bled significantly after operation and two are now dead. The remaining two did not have further bleeding and were doing

satisfactorily when last observed, one of them 19 months and the other 27 months after operation. One of them had vagotomy, pyloroplasty and splenectomy in addition to ligation of the varices.

Figure 12 is a splenoportagram of this patient. The rather large vein leading from the spleen is not the splenic vein but rather the gastroepiploic vein. That the entire major portal system is obstructed is apparent in Figure 13, a portagram made with a jejunal mesenteric vein utilized for the injection. Pronounced collateral development without patency of the superior mesenteric or portal veins is demonstrated.

A similar picture of complete occlusion of all of the major radicals of the portal system is seen in Figure 14. The patient had had splenectomy four years previously for "Banti's syndrome." This portagram was obtained via a jejunal mesenteric vein.

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Subclinical Epileptic Seizures

Impairment of Motor Performance and Derivative Difficulties

CHARLES L. YEAGER, *M.D.*, and JOHN S. GUERRANT, *M.D.*, San Francisco

• **Modern clinical observations have greatly expanded the conception of the characteristics of the various kinds of epilepsy. By simultaneously recording electroencephalograms and the performance of simple motor tasks, it has been possible to demonstrate the effects of epileptic seizures not detectable by unaided observation and not noted by the patient. The effects of these subclinical seizures have been manifested variously—by a lengthening of the time between stimulus and reaction, by inaccuracies of response to stimuli, or by total cessation of performance.**

From this study it is suggested that subclinical seizures probably play a role in producing some of the psychiatric conditions associated with the convulsive disorders, as well as primary behavior disturbances and undifferentiated mental deficiency. It is also suggested that such subclinical seizures may possibly contribute to the characteristics of some cases of criminality and antisocial reactions and schizophrenic reactions.

THE PURPOSE OF THIS PAPER is to present evidence that subclinical epileptic seizures may impair simple motor performance and to point out possible relationships of such impairment to more complex performance and ultimately to disturbed clinical behavior.

It is now well established that in focal seizures every gradation of impairment of consciousness may occur, from none at all to total loss of awareness. Symptoms of seizures are myriad and may include an almost limitless variety of involuntary motor acts, false sensory experiences and affective changes. In conjunction with the method used in the present study, it may be well to note at this point that, in some partial seizures, awareness of various sensory stimuli continues but the capacity to respond to them is lost. For example, it is not unusual for some patients with seizures, especially of the temporal lobe variety, to recall that they have been able to hear and understand the speech of others after they had lost the ability to respond to it.

By studies reported in 1941 and 1947, Schwab[18,19] opened new ways to study the effects of seizures on individuals. He tested the ability of patients with petit mal seizures to make motor responses to auditory and visual stimuli during attacks. Stimuli and responses were recorded simultaneously with the electroencephalograph so that the temporal relationship of each to the others could be ascertained. It was found that always if there was any response at all to a stimulus given during a seizure burst, the reaction time—that is, the interval between the stimulus and the response—was longer than it was to the same stimuli at other times. Degrees of prolongation varied roughly in proportion to the length of the seizure bursts as seen in the electroencephalograph; and often with the longer bursts there was no response to the stimuli. Schwab concluded that he had demonstrated six degrees of impairment of consciousness as reflected in the various degrees of prolongation of reaction times. Although Schwab did not say so, it would appear from the brevity of some of the bursts noted and the minimal effect they had upon the reaction time, that many of the seizures recorded would not have been detectable by ordinary clinical observations.

In 1953, Bates[1] reported the use of an apparently independent but similar technique in the study of a single case of petit mal epilepsy. By making synchronous recordings of electroencephalographic and sound impulses while the patient was reading, he demonstrated various degrees of impaired consciousness.

In the present study an apparatus like Schwab's was used, and the technique was somewhat similar. However, the effects of subclinical seizures upon spontaneously sustained performance were noted, as well as responses to stimuli. The present study also dealt with seizures other than petit mal lapses. Moreover, subclinical seizures were correlated with alterations of performance other than and in addition to the prolongation of reaction time. A final point on which the present study differed from Schwab's was that attention was given to the psychiatric implications of the effects of such seizures.

Figure 1 illustrates the technique employed in this study. The patient was prepared for a routine electroencephalograph which was recorded on the channels shown. A small magnet was attached to one

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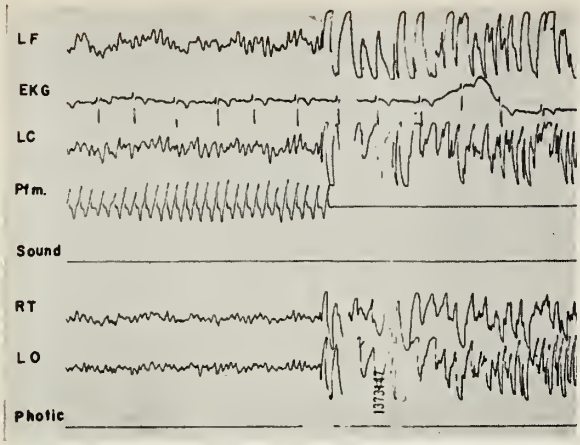

Figure 1.—Cessation of performance with grand mal seizure.

finger and a stationary induction coil was placed just in front of the magnet so that movements of the finger set up potentials in the coil, which were recorded on one channel of the electroencephalograph.* The patient was instructed to tap his finger at any rate he chose. As can be seen, the task was being performed steadily and rhythmically until shortly after the onset of an extremely high amplitude paroxysmal discharge, like that of grand mal seizure, which was inadvertently precipitated by intravenous injection of metrazol. When this occurred, finger movement stopped entirely.

Similarly, Figure 2 shows a total cessation of performance during a petit mal lapse. In this record the patient was responding to sound stimuli recorded by way of a microphone on another channel of the electroencephalograph.†

Figure 3 presents the first example of what is here referred to as subclinical seizures. The patient was a 15-year-old boy with a diagnosis of "primary behavior reaction." He has never been known to have had any form of seizure. Symptoms had consisted essentially of shy, withdrawn behavior and difficulty in learning. The figure shows a total cessation of spontaneously sustained performance associated with a burst of paroxysmal theta activity on the electroencephalograph. It will be noted that at the termination of the paroxysm, performance was resumed. The patient was unaware that he had stopped. This patient showed numerous such bursts with impaired performance, but at no time was there a clinically observable seizure.

The present study grew out of an interest in the high incidence of abnormal electroencephalographic tracing, particularly the paroxysmal type, in children and adolescents with clinical evidence of a primary behavior disorder. That such electroencephalographic abnormalities are common is well supported by a number of studies.[2,3,10,14] beginning with that of Jasper. Solomon and Bradley[12] in 1938, although not every such study has demonstrated similar findings.[5] The relationship, however, of the electrical changes to disturbances of behavior is not known. That is to say, even after the discovery of an abnormality in

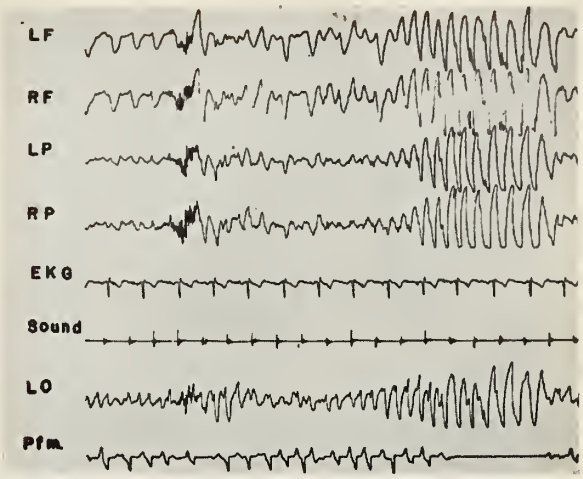

Figure 2.—Cessation of performance with petit mal seizure.

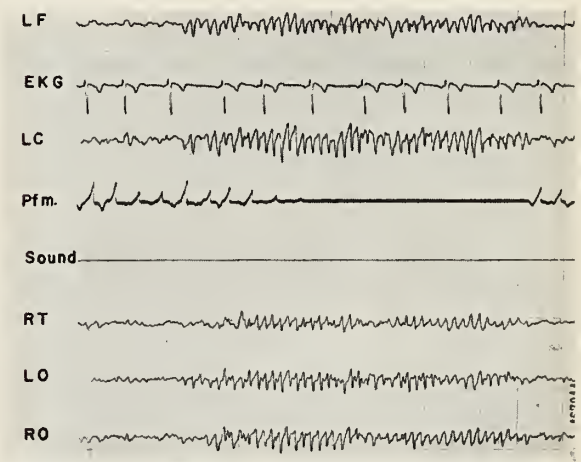

Figure 3.—Cessation of performance without clinical seizure.

*Reference may be made to a technical note made by Lipton[15] for a detailed description of this portion of the apparatus.

†When light was used as a stimulus it was recorded by means of a photoelectric cell through a channel of the electroencephalograph.

KEY TO ABBREVIATIONS ON MARGINS OF ILLUSTRATIONS

LF = Left frontal
RF = Right frontal
LC = Left central
RC = Right central
LT = Left temporal
RT = Right temporal
LO = Left occipital
RO = Right occipital
LP = Left parietal
RP = Right parietal
Photic = Stimulus by light
Sound = Stimulus by sound
Pfm = Performance

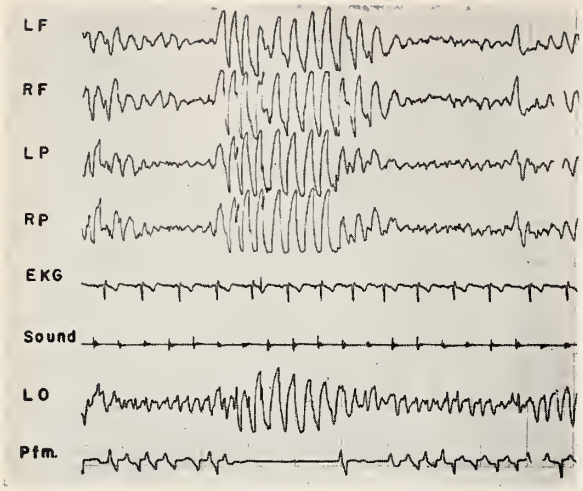

Figure 4.—Cessation of performance without clinical seizure.

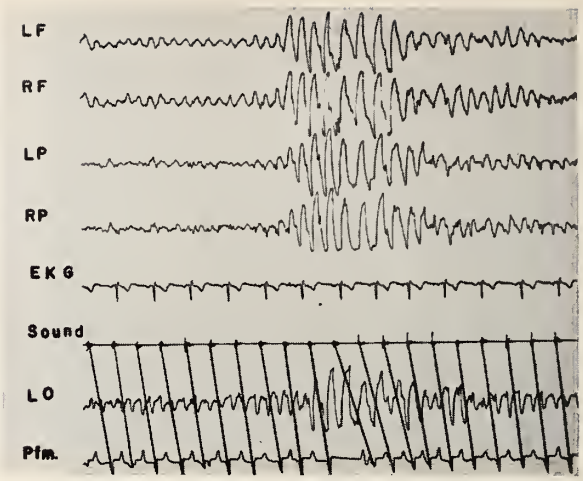

Figure 5.—Delay in response to stimuli.

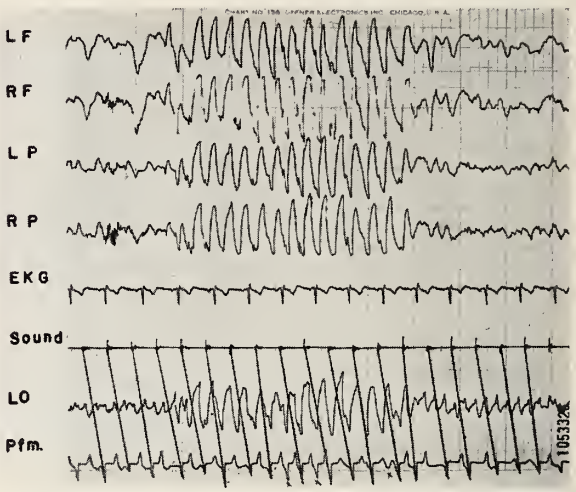

Figure 6.—Performance in excess of number of stimuli.

the electroencephalogram in a given case, it is impossible to evaluate what influence the abnormality is having on the clinical condition. One seems justified in entertaining the possibility that patients could show disturbed behavior, either as the direct effects of, or as psychological reactions to these subclinical seizures.

Some comment with respect to the location of the electrical foci in such cases seems pertinent. Such foci are extremely variable in location. They may arise directly from the cortex, frequently of the temporal lobe; the subcortical regions, chiefly the rhinencephalon; and the centrencephalic area, primarily the diencephalon. The intercommunicating systems which are referred to as cortico-thalamic sectors are significant in the mediation of the clinical manifestations of such seizures. In the case of the 15-year-old boy previously discussed, it was not possible from the record obtained to definitely localize the discharge more than to say that the paroxysmal bursts were of the type that are often associated with psychomotor automatisms, many of which are centrencephalic in origin.

In connection with one of these systems, namely the temporo-thalamic sector, it may be recalled that Hughlings Jackson recognized that uncinate fits frequently had affective components. More recently the report by Davidoff,[4] among others, showed that affectively charged ideas can occur as substantially the only symptoms in some temporal lobe seizures. Gibbs and co-workers[8,9] emphasized that the incidence of various psychiatric syndromes, including psychoses, psychoneuroses and severe personality disturbances is very high in persons with temporal lobe epilepsy. They also noted that the longer the interval between seizures the greater the emotional disturbances were likely to be. Conversely, the occurrence of frequent seizures tended to be accompanied by a reduction in the emotional disturbances. These observations were strongly supported by the studies of Ostow,[16] of Scott and Masland[20] and of Ervin and co-workers[6] (the last mentioned of whom included especially thorough psychological and psychiatric evaluations of their patients).

Until an adequate series is studied, it remains only a conjecture, but still a good possibility, that subclinical seizures in a patient of this type may be directly affecting the apparatus of emotions which the work of Penfield[21] showed to be activated by electrical stimulation of diseased temporal lobe cortices.

Figure 4 shows total cessation of performance associated with a paroxysmal burst not accompanied by a seizure detectable by ordinary observation. This graph was taken from the electroencephalogram of a young woman who had frequent clinical petit mal seizures.

Figure 5 shows a frequently encountered change in performance associated with paroxysmal bursts. Lines have been drawn between the stimulus and response pips.‡ In this case a delay in response (prolonged reaction time of Schwab) resulted, although the patient continued accurately to give one response to each stimulus.

Figure 6 shows still another type of change in performance often seen with a subclinical seizure. Again lines have been drawn from the stimulus to the response pips. During a burst, three responses appeared in excess of the number of stimuli, whereas, in the absence of the paroxysmal activity, responses were accurate.

Figure 7 is shown to illustrate the relative accuracy of response which some individuals maintain during highly abnormal electroencephalographic activity. The patient was a 16-year-old boy who had idiopathic grand mal and petit mal seizures and whose electroencephalographic record shows the sort of severely abnormal activity evident in the figure shown, virtually all the time. Again lines have been drawn between the stimulus pips and response pips and although the rate of the stimulation was being varied at random, the patient responded to all but two stimuli. During this time the electroencephalogram was severely abnormal, showing high amplitude, slow, as well as spike and slow wave activity. It will be noted that at the point at which he missed two responses, the spiking activity had become predominant, which is in accord with an observation made by Schwab. It is interesting to speculate upon the possibility that over the long course of his severe disturbance the patient had learned to partially compensate for the accompanying impairment of function so that by the time the tracing shown in Figure 7 was made, he could perform accurately in the presence of bursts which earlier would have disabled him.

Although this patient showed largely accurate responses in this particular illustration, at other times he showed marked impairment of performance with subclinical seizures. In connection with this observation a segment of his history is pertinent. He had seemed normal and vigorous both mentally and physically until the onset of his convulsive disorder four years previously. Shortly after the onset of the illness, his intelligence quotient was 98. After four years of frequent convulsions, his intelligence quotient was 48 and his intellectual functioning was at the moron level. There is no doubt that Gastaut[7] expressed a current and widely accepted point of view when he remarked that impairment of intellectual functions in epilepsy results only from the brain lesions causing the epilepsy and not from the seizures per se. Idiopathic epilepsy is held never to cause such impairment. It occurs to the authors of this paper that the patient here under consideration had "deteriorated," probably on the basis of frequent—almost constant—subclinical seizures.* We cannot assert positively, of course, that he had no structural brain disorder, but careful clinical investigation, including pneumoencephalograms, failed to reveal any. It is thus suggested that in this patient deterioration was an ictus phenomenon consisting chiefly of subclinical seizures.

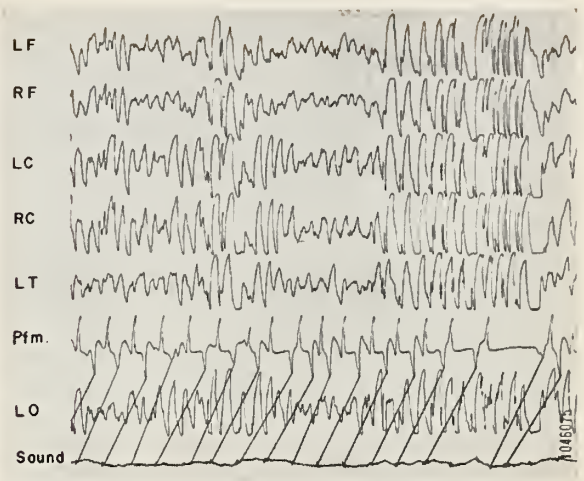

Figure 7.—Performance during constant paroxysmal activity.

The term *deterioration* is used in one sense as meaning organic degeneration, which probably does not occur in a case of this type. In another sense, apparent deterioration may be conceived of as occurring in either or both of two ways. The first would result from the taking over of facilitated pathways by a discharge which introduces patterns of positive but distorted perceptions through which memory patterns, which are not related to afferent stimuli, are called up. Examples of distortion of this kind are "forced thinking," delusional or hallucinatory experiences, anxieties, hysterical manifestations, or even schizophrenic reactions.

The second way "deterioration" might occur is by the interruption of normally functioning memory or thought events by the paroxysmal discharges which interfere with the natural continuity of thought sequences. The type of thought distortion will depend upon the area of interruption. In the light of this concept, one might conjecture that the level of intellectual functioning could be noticeably reduced by the simple but repetitive interruption of logical, unified thought sequences essential to reasoning. The intellectual deterioration noted in the present case could be explained in this way.

‡The term *pips* is applied to the pinnacles or nadirs in tracings which indicate the extremes of action that is being recorded.

*He has clinical seizures too, but no one has ever contended that intellectual functioning was unimpaired during clinical seizures of a major type.

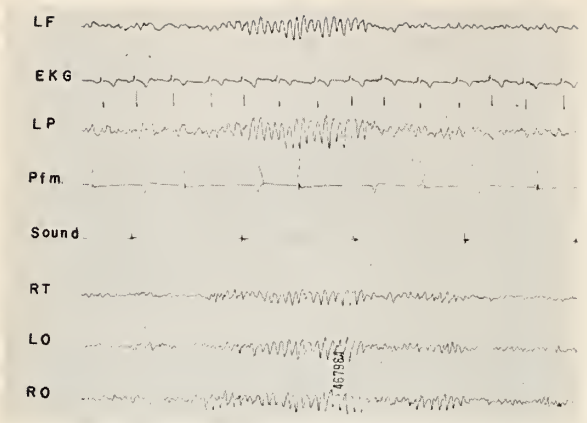

Figure 8.—No alteration of performance.

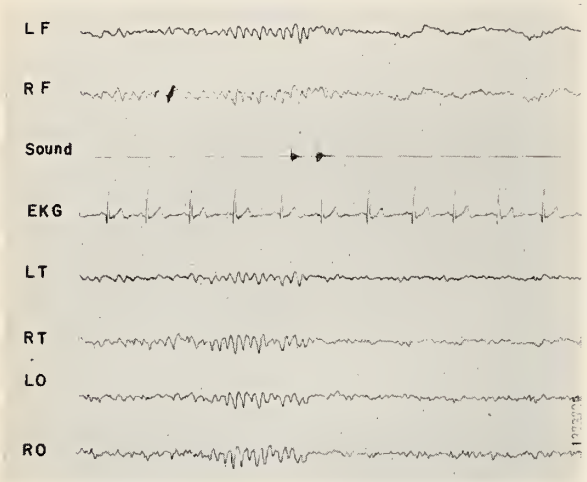

Figure 9.—Suppression of paroxysmal burst.

Figure 8 is taken from the record of the same patient as Figure 3 and is presented to show that sometimes (but uncommonly) no change in performance is detected even with the appearance of a clear-cut paroxysmal burst. In this case two stimuli occurred during the burst and no alteration of response was noted. It seems reasonable to expect that by varying the complexity of the performance response, precise measurements of degrees of impairment might be made. It appears probable that delays in responses and inaccurate (missed and extra) responses are owing to intermediate degrees of impairment between none at all and impairment so severe as to cause total cessation of performance. Specifically, it should be expected that with lesser degrees of impairment more complex responses could be executed without error, and with greater impairment more errors would be evident with increasing complexity of the performance task. Thus it is possible that this patient, who performed well as tested, might have shown impairment if he had been responding to more rapid stimulation or, for example, had been asked to respond to alternate stimuli rather than to consecutive ones.

Conversely, some preservation of the ability to do deliberate acts might possibly be demonstrated in some of the patients who showed complete cessation of response, provided that an even simpler test than movement of a finger could be devised. Finally, in order to test more fully the total reaction or response of a person, the simple motor output must be equated with functional disturbances that appear in response to discharges in other areas of the brain which have only remote influence or none at all upon the motor systems. Further research is being directed toward such problems.

Figure 9 is shown simply to illustrate one of the technical difficulties which may occur in testing of this type. It shows a paroxysm being suppressed in response to auditory stimulation. Such suppression as this has been described previously by Schwab and others.

There are certain limitations to this method. As was just shown, it cannot be used to study the effects of activity which it suppresses. Application to extremely brief, transient activity is also difficult. Finally, of course, it can be used only with patients able and willing to cooperate.

Another limiting factor is that only motor responses are recorded and, as suggested earlier, ability to make such responses may not be impaired unless some influence is brought to bear upon the motor systems. This method does not test for all possible effects of subclinical seizures and some may take forms which cannot be studied in this way. In those cases, other techniques for studying cerebral dysfunction will have to be devised.

Three other clinical groups for which we do not have illustrative material should be mentioned. As recently shown by Walter, Yeager and Rubin,[21] paroxysmal activity is found in an enormously high proportion of patients with undifferentiated mental deficiency. Hill[11] and others have shown similar but less pronounced changes in psychopathic and criminal persons. Much less decided changes have been reported by a number of investigators, most recently Kennard,[13] in schizophrenia. The possibility that subclinical seizures contribute to the impaired intellectual functioning of such mental defectives is certainly an excellent one, and some role in the other clinical groups mentioned seems possible.

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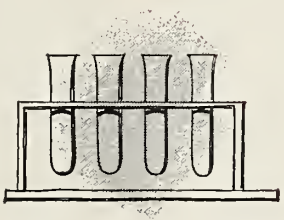

Vitamin D Resistant Rickets

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• **Vitamin D resistant rickets is not a rare disorder. Increased awareness of this metabolic disorder during the examination of children with bowed legs, even infants receiving normal supplements of vitamin D, may lead to diagnosis oftener. Ten previously unrecorded cases of this disorder are included within this report. Three of the patients had associated congenital anomalies which also required treatment. Treatment of the vitamin D resistant rickets consists of the oral administration of large doses of vitamin D. Careful observation of patients during vitamin D therapy to prevent overdosage and resultant hypercalcemia is of utmost importance.**

Surgical correction of the bony deformities is rarely necessary.

The cause of vitamin D resistant rickets is thought to be a defect of renal tubular mechanisms.

THE SYNDROME of rickets resistant to normal therapeutic doses of vitamin D but amenable to massive doses was first described by Albright, Butler and Bloomberg in 1927.[1,2] Until 1950, the number of known cases was approximately 30,[11] but increased awareness of this entity has brought the total of reported cases to over 75.[13,18,21,24,25] The authors' experience with ten cases will be reviewed with emphasis on the clinical features, pathogenesis, differential diagnosis, treatment and associated congenital anomalies (Chart 1).

REPORTS OF CASES

CASE 1. The patient was noted by her parents to have "peculiar legs" from birth. Bowing of the legs became increasingly evident when she began to walk, in spite of persistent orthopedic measures. At the age of three and a half years, she was sent to the U.C.L.A. Pediatric Clinic with a tentative diagnosis of rickets resistant to vitamin D. Dietary history was normal, including 1,000 to 2,000 units of vitamin D in a water-miscible vehicle daily since birth. Upon physical examination, moderate bowing of all leg bones, and moderate enlargement of the costochondral junctions and wrists were noted. In addition, the shape of the skull was quite unusual; although the circumference was normal, the head appeared narrow and elongated. Examination of the ocular fundi by an ophthalmologist confirmed the presence of papilledema. Both eyes appeared unduly prominent. Roentgen studies of the long bones showed bowing, hypomineralization and cupping, fraying and spreading of metaphyses. Numerous views of the skull provided radiological evidence of premature closure of the sagittal cranial suture (or overmineralization). The blood calcium was within the normal range, the phosphorus content 2.6 mg. per 100 cc., and alkaline phosphatase slightly above the normal range. No abnormalities of fat absorption, acidosis or gross renal function could be demonstrated. Amino-aciduria was demonstrated by paper chromatography. Excretion of beta amino isobutyric acid, methyl histidine, glycine and serine was especially high.

A diagnosis of vitamin D resistant rickets and premature closure of the cranial sutures was made. Surgical treatment of the skull resulted in relief of papilledema. Vitamin D administration in dosages ranging from 50,000 to 150,000 units a day resulted in pronounced improvement in the rachitic lesions, as well as decreased amino-aciduria.

CASE 2. A girl was referred to the U.C.L.A. Pediatric Clinic at two years of age for evaluation of bowed legs. She had received normal amounts of vitamin D since she was two weeks of age. X-ray studies of the lower extremities showed changes typical of rickets. Results of urinalysis were normal. The blood calcium level was 10.6 mg. per 100 cc., phosphorus 3.0 mg. per 100 cc., and alkaline phosphatase 35 King-Armstrong units. Blood urea nitrogen, bicarbonate content and chloride content were within normal limits. Intravenous pyelography was carried out and no abnormalities were seen. Urinary chromatographic studies showed elevated excretion of amino acid. Therapy with 75,000 units of vitamin D daily resulted in return of the amino acid excretion to normal and in cure of the disease as determined clinically and roentgenographically. However, the serum phosphorus level continued below the lowest level of the normal range. Attempts to correct this chemical abnormality by giving buffered sodium phosphate and citrate by mouth were unsuccessful. At the time of last report maintenance therapy consisted of 45,000 units of vitamin D daily.

CASE 3. The patient, a girl, was seen by one of the authors at four years of age after one and one-half years of unsuccessful orthopedic measures for correction of bowed legs. She had received normal doses of vitamin D since infancy. Upon x-ray study,

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Clinical and Laboratory Data in Ten Cases of Vitamin D Resistant Rickets

Case No.	Age Yr.	Age Mo.	Familial Incidence	X-ray Evidence of Rickets	Serum Calcium	Serum Phosphorus	Serum Alk. Phosphatase	Associated Anomalies	Response to Therapy with Vitamin D
1.	3	6	None	Positive	Normal	Low	Elevated	Synostosis cranei	Clinical cure
2.	2		None	Positive	Normal	Low	Elevated	None	Decided improvement
3.	4		Unknown	Positive	Normal	Low	Elevated	None	Decided improvement
4.	1	9	None	Positive	Normal	Low	Elevated	Sparse hair; congenital amputation of wrist; defective dentition	No response
5.	2	11	None	Positive	Normal	Low	Elevated	Chronic acidosis due to renal tubular defect	Untreated as yet
6.	3	9	None	Positive	Normal	Low	Elevated	None	Decided improvement
7.	3	6	3 members	Positive	Normal	Low	Elevated	None	Clinical cure; plus osteotomy
8.	1	7	3 members	Equivocal	Normal	Slightly decreased	Elevated	None	Untreated as yet
9.	3	10	3 members	Positive	Normal	Low	Elevated	None	Decided improvement
10.	2	6	3 members	Positive	Normal	Low	Elevated	None	Decided improvement

the condition of the lower extremities and wrists was observed to be typical of rickets. Blood phosphorus was 3.0 mg. per 100 cc., the alkaline phosphatase value 18 Bodansky units and the calcium content 10.0 mg. per 100 cc. Results of electrolyte studies of the blood were otherwise normal. Results of urinalysis were within normal limits. Vitamin D, 50,000 units daily, was given and the patient showed steady clinical and roentgenological improvement.

Case 4. A 6-year-old girl, was first seen at the U.C.L.A. Pediatric Clinic with a resistant case of rickets that had been diagnosed when the patient was 21 months of age. Treatment in the past included the daily administration of up to 2,000,000 units of vitamin D. Parenteral administration of large doses of vitamin D was also attempted. According to the mother, no vitamin D had been administered during the three years preceding the child's admission to the clinic. Upon physical examination, pronounced anterior bowing of both lower legs, cranial bossing, lumbar lordosis and congenital amputation of the right forearm at the wrist were noted. Multiple ectodermal defects were present. There were several xanthomata on the legs. The hair was extremely sparse, and only four deciduous teeth remained. The child perspired very freely at normal environmental temperatures.

The amounts of electrolytes in the blood were within normal limits, with the exception of serum phosphorus, which was below the normal range. The serum alkaline phosphatase activity was 23 King-Armstrong units. Cystine crystals were not found in the bone marrow aspirate. High levels of phosphorus were repeatedly demonstrated in the urine during periods of normal and low intake of phosphorus. During the administration of calcium intravenously, the urinary content of phosphorus decreased, indicating a normal parathyroid response. During the period when no vitamin D therapy was given, rachitic bone changes, visible by x-ray examination, improved noticeably. Although most of the usual diagnostic criteria of vitamin D resistant rickets were present in this case, the possibility of hypersensitivity to vitamin D was being considered at the time of this report.

Case 5. A 3-year-old girl was admitted to the U.C.L.A. Hospital because of roentgenographic observations and results of chemical analysis of the blood consistent with resistant rickets. Since infancy the patient had been given vitamins sufficient for normal needs. Although her appetite was poor, she ingested large amounts of orange juice. There was no familial history of rickets.

The child appeared to be alert. Moderate retardation of linear growth and lateral bowing of the lower legs were noted. The blood phosphorus was 3.8 mg. per 100 cc., calcium content 10.6 mg. per 100 cc. and alkaline phosphatase 23 King-Armstrong units. Blood electrolyte studies showed a reduced bicarbonate content on several occasions and on two occasions an elevated serum chloride content. The urine showed a reduced titrable acidity and decreased ammonia production. With rare exception, the pH of the urine remained more alkaline than pH 7.0 in spite of compensated systemic acidosis. These findings suggested that hyperchloremic renal acidosis of mild degree was the cause of the rachitic changes. In addition to increased dosage of vitamin D, oral administration of alkaline salt mixture resulted in improvement of the rickets.

Case 6. The patient, a girl three and a half years of age, had progressive bowing of the legs since starting to walk. X-rays showed profound osteo-

malasia with other typical rachitic changes. The blood phosphorus level was 3.0 mg. per 100 cc., blood calcium 10.1 mg. per 100 cc. and alkaline phosphatase 13.9 Bodansky units. During administration of 150,000 units of vitamin D daily, toxic symptoms of nausea, vomiting and hematuria developed. Reduction of the dose to 100,000 units brought prompt relief of symptoms. Clinical response of the rickets resulted from this therapy over a period of two months. When last seen, the patient was again taking 150,000 units daily with continued improvement.

Case 7. A 3-year-old boy, was admitted to Shriners' Hospital with complaint of bowed legs noted since he was 14 months of age. Vitamin D sufficient for normal needs had been given since infancy. In addition to typical roentgenologic features of rickets, there was a decreased blood phosphorus level (3.3 mg. per 100 cc.), elevated alkaline phosphatase (32.4 King-Armstrong units), and normal blood calcium (9.7 mg. per 100 cc.). Up to 150,000 units of vitamin D was given for six months. Bilateral femoral osteotomy was then done. Thereafter the patient was given 75,000 units of vitamin D daily and was clinically well. (The patient's mother had bilateral osteotomy for bowed legs at the age of 14 years. She had never received additional vitamin D therapy. She is now 4 feet 9 inches tall and it is assumed that she also had resistant rickets.)

Case 8. The patient, a sister of the patient in Case 7, 2 years of age, was examined because of the familial history. No clinical symptoms of rickets were observed. X-ray films of the lower extremities, however, showed minimal rachitic changes. The blood calcium was 10.3 mg. per 100 cc., phosphorus 3.7 mg. per 100 cc. and alkaline phosphatase 24.0 King-Armstrong units.

Case 9. A 4-year-old girl had a history of increased lateral bowing of the legs, observed over a period of a year. Her mother had had rickets and, at the age of six years, had had bilateral osteotomy for repair of the bowing. The mother was 4 feet 7½ inches tall. Less than normal linear growth and advanced rachitic changes were observed in roentgen studies. The phosphorus content of the blood was 3.7 mg. per 100 cc., calcium 10.4 mg. per 100 cc. and alkaline phosphatase 26 King-Armstrong units. After six weeks of therapy with 100,000 units of vitamin D daily, improvement was observed roentgenographically.

Case 10. When the sister of the patient in Case 9, 28 months of age, was examined, diminished stature was the only abnormality noted clinically. X-ray films of the long bones showed definite rachitic changes. Blood alkaline phosphatase was 45.0 King-Armstrong units, phosphorus content 3.2 mg. per 100 cc. and calcium content 9.6 mg. per 100 cc. Rachitic changes in the bones, as roentgenographically observed, were improved after six weeks of vitamin D therapy.

DISCUSSION

The usual clinical manifestations of vitamin D resistant rickets are similar to those of vitamin D deficiency rickets. Both probably begin within the first year, but whereas the latter usually is diagnosed early, rarely is resistant rickets diagnosed in a patient less than one year of age, perhaps because suspicion of rickets is not high in a patient so young who is receiving the usual daily supplement of vitamin D. Usually with both kinds of rickets the first symptom noted is bowing of the legs with concomitant shortening of stature. The bowing may be in a lateral, medial or anterior direction, lateral most often. Cranial bossing, beading of the ribs and enlargement of the knees, wrists and ankles may also be present.

In the very early stages of the disease, rickets cannot be detected roentgenographically. This is particularly true if the roentgen studies do not include the distal parts of the lower extremities at the time of evaluation of bowed legs, since the earliest changes occur at the site where the bone growth is most rapid. The first roentgenographically observable changes occur at the epiphyseal plate. Normally the plate is sharply defined, but in a patient with rickets there is a frayed appearance at the metaphyseal-epiphyseal junction which is caused by irregular osteoblastic deposition of bone salt resulting from continued, but disorderly, resorption of the cartilagenous osteoid tissue in this rapidly growing area. The most common sites of such involvement in rickets are the distal femur and the distal ends of the ulna and tibia. As the rachitic process continues, demineralization of the shaft occurs, owing to a loss of lime. As a consequence of this softening of the bone, bowing and, occasionally, fractures may occur.

Chemical studies of the blood in a typical case show decreased serum phosphorus concentration and elevated alkaline phosphatase activity. Blood calcium levels may be normal or slightly depressed.

Resistant rickets is generally considered to have a familial basis, although reports of sporadic cases are numerous.

Pathogenesis

Fanconi's concept of "phosphate diabetes" due to selective tubular deficiency as the primary mechanism in resistant rickets is in general agreement with that of most investigators. Robertson and co-workers[20] were the first to express this concept. Other observers, including Winberg and co-workers[25] who recently reported on the subject, could not demonstrate the increased tubular excretion of phosphorus in untreated resistant rickets. Perhaps certain cases may have a different pathogenesis, and perhaps not all vitamin D resistant rickets is of the same type.

However, most of the cases described herein, as well as the majority of cases reported in the literature, appear to be a variant of the Debre-de Toni-Fanconi syndrome, where some degree of tubular dysfunction is evident. In two of the cases reported herein, abnormal urinary amino acid excretion was demonstrated by paper chromatographic methods. Fishman and Jonxis also observed this condition in patients with vitamin D resistant rickets.[10,15,16] The amino-aciduria may possibly result from the same basic defect as does the phosphaturia.

Although faulty intestinal absorption of vitamin D may bring about the clinical features of rickets, this defect was not present in the patients under consideration. Normal vitamin D levels may be demonstrated in the blood of patients with vitamin D resistant rickets at a time when the patient is receiving only small doses of vitamin D by mouth, even while the disease is in its active state.[3,8]

There are two primary sites of action of vitamin D. The greatest action is in the intestine, where vitamin D increases the absorption of ingested calcium and, as a consequence, the absorption of ingested phosphorus. Vitamin D also acts on renal tubules. Its mechanism of action there is not well understood. Albright postulated that the greater tubular efficiency of phosphate reabsorption is the result of parathyroid inhibition which has resulted from the high intestinal absorption of calcium. In patients with vitamin D resistant rickets, this mechanism is further complicated. The reasons for the hyperphosphaturia and amino-aciduria are not as yet fully explained. Jonxis was unable to demonstrate abnormal amino-aciduria in patients with hyperparathyroidism, implying that parathyroid hormone is not responsible for amino-aciduria in resistant rickets.[14] Thus, even though patients with vitamin D resistant rickets are known to have increased parathyroid activity, it would appear that this is a secondary rather than a primary phenomenon. Compensatory parathyroid hyperactivity accounts only for the normal blood calcium levels usually found in this condition. From the available evidence, it would seem that the primary defect in vitamin D resistant rickets lies within the renal tubular cell and is associated with a poorly understood enzymatic process which may be dependent upon vitamin D for its action.

Differential Diagnosis

Vitamin D resistant rickets must be differentiated from conditions which may cause similar abnormality in growth of bones. Congenital abnormalities of the lower extremities, such as femoral bowing, coxa varum, coxa valgum and bony defects associated with dimpling of the overlying skin, must be considered. Other, more generalized congenital defects, such as chondrodystrophy and osteochondrodystrophy, may simulate vitamin D resistant rickets in the early forms of each. These other conditions are not associated with abnormalities in the blood concentrations of calcium, phosphorus and alkaline phosphatase, nor do they respond to therapy with vitamin D.

Rathbun[21] recently described an inborn error of metabolism which is associated with an abnormality in the metabolism of alkaline phosphatase.[21] This condition may simulate vitamin D resistant rickets in clinical and radiological characteristics. Differential diagnosis from resistant rickets is made on the basis of chemical studies of the blood. In this condition, which has been called "hypophosphatasia," the blood calcium levels are normal or high, the serum phosphorus levels are normal, and the alkaline phosphatase activity of the serum is depressed or absent. Vitamin D in large doses does not improve the condition.

Lead poisoning in its chronic form has, at times, been associated with amino-aciduria, hypophosphatemia and rachitic changes in the bones.[6] The chemical contents of the blood may also be abnormal. These rachitic changes are the result of an excessive loss of calcium in the stool as calcium soaps. In addition, there is a failure of intestinal absorption of the fat-soluble vitamin D. Steatorrhea, therefore, may result in rickets which does not respond to oily solutions of vitamin D administered orally.

When it has been established that the problem is truly that of rickets which does not respond to the usual low dosage level which will cure vitamin D deficiency rickets, one must consider whether additional metabolic defects are present. Renal acidosis, as seen in the classical Fanconi syndrome, and the hyperchloremic syndrome described by Albright must be considered. Therapy with large doses of vitamin D alone in these conditions is not sufficient.

Treatment

Satisfactory clinical healing of the rachitic lesions in patients with uncomplicated vitamin D resistant rickets usually results when from 50,000 to 150,000 units of vitamin D is given daily. Occasionally a patient will require considerably larger doses before a response can be noted. The vitamin D should be administered by mouth, since there is no defect in the absorption by this route.

The earliest response to proper treatment can be best evaluated by x-ray films of the bones. This is manifest by finding a linear increase in density in the rachitic metaphysis at the rapidly growing ends of the long bones, which results from an increased and more orderly deposition of bone salt in this area and eventually progresses to a broad, dense, transverse line. As healing continues, x-ray films

will show a disappearance of the cupping, as well as a decreased distance between the calcified portions of the metaphyses and epiphyses. Later, the density of the shafts of the long bones increases. Gradual disappearance of the bowing and other bony deformities accompanies this process. Whether the deformity will be completely overcome depends upon the severity of involvement at the beginning of therapy, the age at which therapy is begun, and the adequacy of therapy on an individual basis.

In addition to radiological observation of progress, chemical evidence may be obtained of the effect of large doses of vitamin D. The earliest of these is a return of the elevated alkaline phosphatase activity of the serum to normal levels. This evidence may not be present as early as radiologic evidence of healing. In resistant rickets, unlike ordinary rickets, the return of the serum phosphorus level to normal occurs late. In some patients this may not occur until several years after therapy is begun.[11,22] (Attempts to accelerate the return of inorganic phosphorus level to normal in one of the patients treated by the authors, by increasing the dietary intake of phosphorus, were unsuccessful.)

Theoretically, the administration of citric acid and citrate should be of some benefit. This organic acid combines with bone salt as an integral part of the crystalline framework of bones. The citric acid content of bone may be experimentally increased by the administration of vitamin D. The citric acid content of the blood rises during the administration of vitamin D, as well as with calcium administration alone. Increasing the amount of phosphorus in the diet appears to have no effect on blood citric acid levels.[5] Harrison[12] demonstrated that the level of citric acid in the blood in children with vitamin D deficiency rickets averages only 1.5 mg. per 100 cc., as compared with the normal of 2.5 mg. The administration of vitamin D caused this level to return to normal. In rats, diets low in calcium and phosphorus will produce rickets and the administration of citric acid and sodium citrate will promote healing of rachitic lesions, even though the rat continues to receive a diet low in calcium and phosphorus.[26]

In spite of these fragments of indirect evidence which would suggest that additional citrate should be of benefit in the therapeutic regimen of patients with vitamin D resistant rickets, this has not been the case.[8] In another attempt to accelerate the return of the serum inorganic phosphorus level to normal in one of our patients, we administered large doses of citrate in addition to vitamin D. There was no detectable improvement in the serum phosphorus level.

The dangers of using large doses of vitamin D can be great, unless proper precautions are taken. Hypercalcemia with resultant soft tissue calcification and particularly renal calcification may result unless adequate control is maintained. We have arbitrarily chosen 12 mg. of calcium per 100 cc. of blood as the upper safe limit. When this level is reached, regardless of the state of healing of the rachitic process, the dosage of vitamin D must be reduced. The content of calcium in the blood of all patients receiving large daily doses of vitamin D is determined monthly. Although we have attempted to evaluate the calcium levels of these patients by use of the Sulkowitch reagent for testing the urine, this has not proved satisfactory. The correlation of results of this urine test with blood calcium determinations has been poor; in some cases hypercalcemia has developed in the face of normal results of the urine tests.

Although the dosage necessary for promoting healing early in the disease may be somewhat greater than the dosage required after healing is well under way, there appears to be no predictable formula for calculating individual dosage levels. In our experience, repeated evaluation over periods as long as a year may be required to reach the proper dosage level, since hypercalcemia may develop very slowly. A complicating situation results when a patient receiving large doses of vitamin D is suddenly immobilized. In such circumstances the blood calcium level may rise to dangerously high levels, with resultant deposition of calcium in soft tissues, particularly in renal tubules. It seems desirable to discontinue high levels of vitamin D well in advance of predictable periods of immobilization, such as for elective operation to correct orthopedic deformities. Nausea and vomiting may be due either to the toxic effects of overdosage or to the gastric irritation of the vitamin D per se.

The continuing high requirement of vitamin D is usually evident until the end of the growth period, when the epiphyses close. In the majority of children treated before the age of five years, surgical correction of the deformities is unnecessary. Surgical results are poor in patients who have had no previous vitamin D therapy, and a return of the deformities is to be expected.

Associated Abnormalities

Three of the ten children included in this report had associated congenital abnormalities. The patient in Case 1 had premature closure of the cranial sutures with resultant increased intracranial pressure. Although this anomaly is not uncommon with other forms of congenital disorders of bone metabolism, it has been reported only twice previously in association with vitamin D resistant rickets.[7,13] In Case 5 the patient had chronic acidosis associated with alkaline pH of the urine and decreased ability of the renal tubule to produce ammonia. In this

case the bone disease did not respond to vitamin D until alkali therapy was added. The patient in Case 4 had multiple ectodermal defects in addition to the apparent resistance to extremely high doses of vitamin D. A similar association of vitamin D resistant rickets and ectodermal defects was reported by Imerslund.[13] In the case here reported, radiologic improvement of the rachitic deformities occurred during a three-year period when no vitamin D was given. Spontaneous improvement of the rachitic process is very unusual in these patients. Hence it is possible that the patient in Case 4 may be hypersensitive to vitamin D rather than resistant to it. A similar case was reported by Van Creveld.[23]

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Diabetic Patients with Myocardial Infarction

The Diagnostic Accuracy of the Electrocardiogram

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• **In a study involving interpretation of electrocardiograms of two groups of patients who had myocardial infarction—one a group of diabetic patients and the other group made up of nondiabetic—the electrocardiogram was found to be considerably less accurate in the diagnosis of myocardial infarction in the diabetic patient than in the nondiabetic subject. This is due to the fact that the patterns which mask the diagnosis of myocardial infarction in nondiabetic patients occur more frequently in diabetic individuals. It is important to note that in no instance were the electrocardiograms interpreted as normal in the diabetic group.**

THE ACCURACY of the electrocardiogram has been well established in the diagnosis of myocardial infarction in nondiabetic persons.[3] The assumption has been that the electrocardiogram should be just as able to corroborate the diagnosis of myocardial infarction in diabetic patients. Joslin[1] stated, "In diabetic patients the common electrocardiographic evidences of coronary occlusion are occasionally not obtained or [are] obscured for various reasons." In a survey of the American literature no studies substantiating this impression were found.

It has been often noted at the electrocardiographic clinicopathological conferences conducted at the Los Angeles County General Hospital that when the electrocardiogram failed to reveal the presence of a proved myocardial infarction, the patient usually had diabetes mellitus. The present study was undertaken to determine if any disparity exists in the accuracy of electrocardiographic diagnosis of myocardial infarction between diabetic and nondiabetic persons.

METHODS

The cases for study were obtained from the autopsy files of the Los Angeles County General Hospital for the years 1948 to 1952 inclusive. In the first two years of the study, electrocardiograms consisted of the six chest leads (CF) in addition to the limb leads. In the second two years the augmented unipolar and V leads supplanted the CF leads.

Data on two groups of patients with "autopsy proved" myocardial infarctions were compared. The first group consisted of diabetic patients who had myocardial infarction, observed at autopsy, and whose records included electrocardiograms with precordial leads. The second series included 52 consecutive nondiabetic persons who had electrocardiograms and in whom myocardial infarction was observed at autopsy. Each series consisted only of cases in which it could be definitely determined that the infarction had occurred prior to the taking of the electrocardiograms. In two sets of readings for the diabetic group 53 and 56 cases met this criterion. The usual accepted electrocardiographic criteria were used in diagnosing the presence of a myocardial infarction. In addition if the electrocardiograms were interpreted as showing acute anoxia, injury or ischemia patterns, these were also counted as diagnostic of infarction. In these cases the assumption was that the actual muscle death had occurred shortly after the electrocardiogram was taken. In all cases the infarcts were transmural.

Two sets of interpretations of all the electrocardiograms were used. The first consisted of the interpretation by members of the electrocardiographic department, which is composed of junior and senior attending physicians of the medical staff of the Los Angeles County General Hospital, as well as a few third year medical residents. The second set was read by a consulting cardiologist of the senior attending staff of the Los Angeles County General Hospital.* The following information was available to all the readers: Age, sex, blood pressure, and whether or not quinidine or digitalis was being administered. Only the first set of readers was aware of the clinical impression. The age of the infarct was determined from the information available in the autopsy protocols on the basis of the gross and microscopic descriptions of the pathologic material according to the criteria set forth by Mallory and co-workers.[2] As the age of the infarct in the first three weeks after it occurs can be judged fairly accurately from the histologic features, the material for this study was divided into two groups. The infarcts in which the pathological changes were such that they could be classified as occurring within

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TABLE 1.—*Accuracy of Diagnosis of Infarction on Basis of Electrocardiograms in Diabetic and Nondiabetic Patients*

Reader	Diabetic			Nondiabetic		
	Number Correct	Number Incorrect	Total	Number Correct	Number Incorrect	Total
Cardiologist	37 (66%)	19 (34%)	56	46 (88%)	6 (12%)	52
Staff	27 (51%)	26 (49%)	53	42 (81%)	10 (19%)	52

TABLE 2.—*Accuracy of Diagnosis of Acute Infarction on Basis of Electrocardiograms in Diabetic and Nondiabetic Patients*

Reader	Diabetic			Nondiabetic		
	Number Correct	Number Incorrect	Total	Number Correct	Number Incorrect	Total
Cardiologist	31 (72%)	12 (28%)	43	39 (93%)	3 (7%)	42
Staff	21 (50%)	21 (50%)	42	35 (83%)	7 (17%)	42

three weeks of the time that the electrocardiograms were recorded were designated as recent infarcts. The remaining ones were classified as old infarcts. In all instances the area of infarction or scar tissue measured two centimeters or more in diameter.

RESULTS

The correctness of the electrocardiographic diagnosis of myocardial infarction as proved at autopsy in the diabetic and the nondiabetic groups is shown in Table 1. Both groups included all infarcts regardless of age. When results in the nondiabetic group were compared with those in the diabetic group, the inaccuracy of the electrocardiogram became apparent. In 52 nondiabetic patients myocardial infarction was correctly diagnosed by the staff in 42 or 81 per cent of the cases and by the consulting cardiologist in 46 or 88 per cent of the cases. These results compare favorably with those of Zinn and Cosby[3] who reported 80 per cent accuracy in a similar series of nondiabetic patients. In diabetic patients myocardial infarction was correctly diagnosed by the staff in only 27 of 53 cases, or 51 per cent, and by the consulting cardiologist in 37 of 56 cases or 66 per cent. These results were analyzed statistically and proved to be at a significant probability level.† The slight difference in accuracy between the two sets of readers did not prove to be significant.

It was thought that the inclusion of both recent and old infarcts in the same group was affecting the conclusions. Therefore the data were recalculated including only infarcts of three weeks or less in duration (Table 2).

The accuracy of the staff was 21 out of 42 cases or 50 per cent in the diabetic patients and 35 out of 42 or 83 per cent in the nondiabetic patients. The accuracy of the consulting cardiologist was 31 out of 43 or 72 per cent in the diabetic group and 39 out of 42 or 93 per cent in the nondiabetic group.

†All statistical analyses were determined by either the method of chi squared (x^2) or the Fisher exact method for fourfold tables. The probability that these results could have occurred by chance was one in one thousand times.

TABLE 3.—*Effect of Location of Infarction on Accuracy of Diagnosis by Electrocardiogram*

Location of Infarct	Number Correct	Number Incorrect	Total
Involving septum	26	11	37
Anterior septal	16	6	
Posterior septal	9	3	
Anterior posterior septal	0	2	
Pure septal	1	0	
Not involving septum	10	7	17
Anterior	4	1	
Posterior	6	6	

TABLE 4.—*Electrocardiogram Patterns Obscuring Diagnosis (Readings by Consulting Cardiologist)*

	Number of Cases
Left ventricular hypertrophy	6
Left bundle branch block	2
Right ventricular hypertrophy	1
Right bundle branch block	2
Supraventricular tachycardia	1
Auricular fibrillation	1
Digitalis effect	3
Hypopotassemia*	2
Abnormal electrocardiogram	1

*Actually potassium levels were not abnormal.

The difference in accuracy as between the two groups was still significant.

An attempt was made to analyze the factors in the diabetic patients that may have accounted for these differences. When the groups were subdivided for this purpose, they became rather small and definite conclusions were not warranted. The diagnosis of infarction was made with equal facility whether the area of infarction involved the anterior, posterior or septal walls (Table 3).

The effects of electrolyte imbalance on electrocardiograms are well known. In this series most of the patients had a normal carbon dioxide combining power and nonprotein nitrogen blood levels at the time the electrocardiogram was recorded. In the few instances in which serum potassium levels were de-

termined, they were normal. Acidosis was present in a total of ten cases. In eight of these ten cases the presence of an infarct was indicated by the electrocardiogram.

Neither the age nor sex of the patient, nor the duration and severity of diabetes had any bearing on the electrocardiographic accuracy.

Left ventricular hypertrophy, digitalis effect and bundle branch block accounted for the majority of interfering patterns (Table 4).

These patterns were similar to those listed by Zinn and Cosby[3] as interfering with the diagnosis of myocardial infarction in nondiabetic patients. It should be noted that in the presence of a known myocardial infarction, none of the electrocardiograms of the diabetic individuals was read as normal.

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Spontaneous Splenic Rupture in Mononucleosis

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• **Infectious mononucleosis is a disease entity with many and various manifestations. Suspicion of the disease is of the utmost importance. When indicated, adequate tests often repeated must be made to prove or disprove a suspicion of infectious mononucleosis. The disease is usually a benign condition; one of the more serious complications is "spontaneous" splenic rupture. Whether rupture is indeed spontaneous or is caused by relatively light trauma to a weakened organ is debatable. Splenectomy is the treatment for this complication; it does not cure the underlying disease. Once the diagnosis of infectious mononucleosis has been established, abdominal examinations should be limited and cautious.**

INFECTIOUS MONONUCLEOSIS has been described as a protean disease which involves the reticuloendothelial system. It may affect the entire body with equal intensity or be manifest in symptoms relating to one or a few structures of this system. The onset is usually associated with malaise, upper respiratory tract infection, weakness, low grade fever, mild pharyngitis and enlargement of lymph nodes. Chemotherapy helps little and there is a lingering illness of longer than is normally expected. Approximately seven to ten days after onset, the heterophil antibody reaction becomes positive in significant diagnostic dilutions. If the disease is suspected yet not immediately proved by laboratory aids, tests for it should be repeated at regular intervals. It is important to suspect the disease when the lymph nodes are enlarged, for correct diagnosis greatly decreases the mortality. In the majority of cases, if properly treated with rest and symptomatic medication, it is an innocuous and benign condition. Once therapy is begun, the patient has symptomatic improvement and is likely to insist on resuming normal activities. The physician must not be influenced by the wishes of the patient. In certain instances the disease may be fulminating and fatal.

Spontaneous splenic rupture is one of the rarer complications. It occurred in two patients who were treated at Norton Air Force Base Hospital, San Bernardino, California. One of the patients was observed by the authors (Case 2). The report of Case 1 was abstracted from hospital records.

CASE 1. A 31-year-old male officer was admitted to the hospital on April 2, 1954. Ten days before admission the patient noticed the onset of nocturnal chills, fever and myalgia; and two days before admission, generalized lymph node enlargement and pronounced malaise developed.

Upon examination the patient was observed to be well developed and well nourished, in no acute distress, well oriented and cooperative. The blood pressure was 138/74 mm. of mercury, the pulse rate 88, the temperature 98.6°F. Diffuse pharyngitis, pronounced enlargement of cervical lymph nodes and moderate axillary lymph node enlargement were noted. No abnormalities were noted in the heart and lungs. The liver, palpable one and a half fingerbreadths below the right costal margin, was firm and slightly tender. The splenic edge was barely palpable.

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Results of urinalysis were within normal limits. Leukocytes numbered 18,200 per cu. mm. of blood —17 per cent neutrophils, 30 per cent lymphocytes, and 53 per cent abnormal lymphocytes. Erythrocytes numbered 4.2 million per cu. mm. and the hematocrit was 36 per cent. The sedimentation rate was 26 mm. in one hour. Heterophil reaction was positive in 1 to 1,792 dilution.

The patient was kept in bed and was given symptomatic treatment. He became quite nauseated on the morning of April 4 and had several bouts of vomiting. Several hours later the patient began to complain of intermittent pains in the left upper quadrant of the abdomen, which became progressively worse during the night.

On April 5 the abdomen was moderately distended with shifting areas of dullness to percussion in the flanks and positive fluid waves. Leukocytes numbered 16,050 per cu. mm.—29 per cent neutrophils and 40 per cent lymphocytes (30 per cent reported as abnormal). Erythrocytes numbered 2.6 million per cu. mm. and hemoglobin content was 9.5 gm. per 100 cc. The hematocrit was 26 per cent. A diagnosis of "acute surgical abdomen" was made. The abdomen was opened and the spleen was found to be enlarged and ruptured. It had become partially walled off by the stomach, colon and omentum. The spleen was removed.

The pathological report stated that the gross specimen consisted of a spleen 15 x 10 x 6 cm., weighing 432 gm. The capsule was almost completely fallen away, leaving the underlying pulp naked. On section, the specimen was found to be extremely pulpy with a loss of the usual architectural features.

Upon microscopic examination the sinusoids were observed to be filled with cells. Normal and atypical lymphocytes were seen. There were numerous areas where the spleen showed microscopic cleavage

planes and these areas were also filled with a similar cell in a protean coagulation. The pathological diagnosis was infectious mononucleosis of the spleen with rupture.

The patient made an uneventful postoperative recovery and was discharged on April 26, 1954. He was readmitted on June 7, 1954, with complaint of increasing fatigue, bloating and anorexia. Seven days previously a low grade fever had developed. At the time of admission the sclerae were decidedly jaundiced. A diagnosis of homologous serum hepatitis secondary to blood transfusion was made. Conservative treatment was given and the patient recovered. Thereafter he remained asymptomatic. The interval between the blood transfusion and the onset of symptoms on the second admission was 50 days—a relatively short incubation period for homologous serum hepatitis. The second illness may have been a relapse of infectious mononucleosis. Clinical hepatitis with jaundice is not an infrequent complication of infectious mononucleosis, as the liver is richly endowed with Kupffer cells, a part of the reticuloendothelial system.[3]

Case 2. A 23-year-old white male airman was admitted to the hospital on December 11, 1954. A month previously the patient had had a mild upper respiratory tract infection that lasted four or five days. Three weeks later, a week before admittance, while engaged in a moderately strenuous training program, he had fallen several times, striking his abdomen against a pack that he carried. Four days before admission a nonproductive cough associated with weakness and extreme malaise developed. While taking a shower an hour before hospitalization, the patient had sudden, severe pain in the left upper quadrant of the abdomen. The pain was accentuated by coughing and deep inspiration.

Upon examination the patient was observed to be well developed and well nourished, well oriented and cooperative. The blood pressure was 126/70 mm. of mercury, the pulse rate 104, respirations 20 per minute and the temperature 100.2°F. The skin was pale, with cold, clammy perspiration. The posterior pharyngeal wall was of a dull red hue. No enlargement of lymph nodes was noted in the cervical or axillary regions. The heart and lungs were normal. Moderate voluntary splinting of the muscles of the upper abdomen was noted. No masses were palpated. The outline of the spleen could not be felt.

Leukocytes numbered 10,830 per cu. mm.—neutrophils 40 per cent, lymphocytes 46 per cent, abnormal lymphocytes 13 per cent, basophils 1 per cent. Erythrocytes numbered 4.3 million per cu. mm. and the hemoglobin content was 13.8 gm. per 100 cc. Results of urinalysis were within normal limits. The heterophil titer was positive in 1 to 3,584 dilution. Guinea pig absorption tests were specific for infectious mononucleosis during this time.

A diagnosis of infectious mononucleosis with possible "spontaneous" splenic rupture was considered. No abnormalities were noted in x-ray films of the abdomen and chest taken at the time of admission.

Six hours after admission, the patient complained of increasingly severe pain in the left upper quadrant of the abdomen. The patient was observed closely and repeatedly examined. The blood pressure and pulse remained stable. Left upper abdominal pain continued but it was intermittent and decreasing in severity. Blood examinations were done repeatedly and the hematocrit and hemoglobin content slowly decreased. In a plain film of the abdomen taken 24 hours after admission, mild gastric dilatation and the presence of a mass displacing the stomach in the left upper quadrant were observed. The patient was given a transfusion of 500 cc. of whole blood and pronounced symptomatic improvement occurred immediately.

On December 14, 1954 the patient complained of a sudden severe pain in the left upper quadrant of the abdomen, associated with pain in both shoulders. He was nauseated and became cold and clammy. The blood pressure was 90/60 mm. of mercury and the pulse rate 130. Transfusion of whole blood was started and the patient was taken to surgery. At operation a large walled-off mass was found in the left upper quadrant of the abdomen. In the left subdiaphragmatic space there were multiple old clots and a pulpy splenic mass which was bleeding from multiple rents. The splenic capsule was almost completely avulsed.

The pathological report said that the specimen consisted of a spleen weighing 310 gm. and measuring 15 x 13 x 5.5 cm. The external surface was pale brown. The gastric surface of the spleen was interrupted by numerous large, irregular gaping rents extending the entire length of the spleen. There were numerous dark red blood clots that measured up to 10 cm. in greatest dimension. Upon microscopic examination it was observed that the usual architectural pattern was greatly distorted by diffuse hyperplasia of the reticuloendothelial elements. The usual germinal centers were reduced in number and size. Within the sinusoids there was a typical cell that is seen in infectious mononucleosis—a large oval cell with pale cytoplasm and oval vesicular nuclei in which the chromatin is rather prominently clumped. Also within the sinusoids there were numerous polymorphonuclear cells, eosinophils, macrophages and a number of metamyelocytes. The diagnosis was infectious mononucleosis with splenic involvement and recent rupture of the spleen.

Postoperative recovery was uneventful. After ten days he was placed at complete bed rest for a period of one month as treatment of infectious mononucleosis. Two weeks following the operation heterophil reaction was positive in 1 to 890 dilution. Six weeks later positive reaction occurred at 1 to 224 dilution. Results of liver function tests were within normal limits. The patient was then completely asymptomatic. Heterophil reaction and liver function tests were done at monthly intervals for a period of six months with the thought that if nausea,

vomiting, anorexia or malaise developed again and were associated with a rise in the heterophil titer, the patient would be returned to bed rest.

COMMENT

The mortality rate associated with spontaneous splenic rupture in infectious mononucleosis is extremely high. In 23 cases reported, there have been five deaths or a mortality rate of 22 per cent. Even more impressive was the 40 per cent mortality rate in cases in which infectious mononucleosis was not diagnosed preoperatively or before death.[5] A preoperative diagnosis of infectious mononucleosis is of prime importance in decreasing the mortality rate. Since 1932, when Paul and Bunnell[4] discovered the presence of agglutinins and hemolysins for sheep erythrocytes in the serum of patients with infectious mononucleosis, the diagnosis of this disease has been on a firmer foundation.

Once the diagnosis has been established, the ever present possibility of splenic rupture must be borne in mind. The question as to whether the spleen actually ruptures spontaneously has been raised many times. There is extensive loss of normal splenic architecture in infectious mononucleosis. In the capsule and trabeculae considerable cellular infiltration occurs, with edema and so-called cloudy swelling. The basic structure of the spleen is greatly weakened. There is no doubt that the diseased organ is much less likely to withstand trauma than is a normal spleen.[5]

In Case 2 there was definite history of repeated concussive trauma. In Case 1 the diagnosis of infectious mononucleosis was made immediately, but even so it is probable the abdomen was palpated many times in the course of examination. In cases in which definite diagnosis is not made promptly, the patient undergoes many abdominal examinations for diagnosis. Frequently in reported cases, the onset of severe abdominal pain was related to trauma and stress such as that associated with vomiting and straining during bowel movement.[2] It would seem possible that even minor trauma of this kind might have relatively great effect on a severely diseased spleen. Once the diagnosis of infectious mononucleosis has been made, examination of the abdomen should be minimal, cautious and gentle.

Smith and Custer[5] noted that rupture of the spleen takes place at least three weeks after onset of the infectious mononucleosis. Presumably it is during this period that the capsular and trabecular changes progress to the point of rupture either "spontaneously" or through slight trauma. The symptoms of onset of "spontaneous" rupture of the spleen in infectious mononucleosis are quite variable. Rupture may be associated with onset of severe pain in the left upper quadrant of the abdomen, which may or may not be constant and accompanied by signs of intense shock. Gastric dilatation and displacement of the stomach by a soft tissue mass from the left upper quadrant as seen on a plain film are highly suggestive evidence. It is important to repeat the hemoglobin and hematocrit determinations for signs of slow bleeding which may not be clinically evident. It has been noted by various observers that splenic rupture was followed by reversal of the cell differential usual in infectious mononucleosis, with leukocytes and neutrophils rather than lymphocytes becoming predominant.[6] This was not noted in the two cases herein reported. A further aid in diagnosis is paracentesis. If blood is obtained, the diagnosis is supported; but even if it is not, the suspicion of ruptured spleen cannot be allayed, for the organ may be walled off. Once the diagnosis is made, operation should be done immediately.[1]

Splenic rupture with hemorrhage progresses in two ways. One is by immediate hemorrhage with exsanguination and death. This may occur within three hours after the onset of acute symptoms of abdominal pain. The other way is by delayed hemorrhage—the delay being caused by tamponade, as happened in both the cases reported herein. In each, at the time of operation, it was noted that a partial walling-off had taken place. Tamponade occurs in the following manners: Simple rupture with clot formation, simple or multiple ruptures with omental plug, simple or multiple ruptures with walling-off by the stomach, colon and omentum.[7]

It is impossible to estimate the incidence of infectious mononucleosis and the complication of splenic rupture. It is probable that it is rather rare.[3] In the differential diagnosis of acute abdominal pain it must always be considered. This condition may simulate such entities as a ruptured peptic ulcer, acute cholecystitis, acute hemorrhagic pancreatitis, acute appendicitis with peritonitis, acute mesenteric thrombosis and acute intestinal obstruction.

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Urinary Diversion in Therapy of Pelvic Cancer

An Appraisal of Ileal-Ureteral Anastomosis

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• **In 43 cases, diversion of the urinary stream was carried out by means of an end-to-side anastomosis of ureters into an ileal segment. Forty-one of these operative procedures were performed in conjunction with the primary or secondary surgical treatment of malignant neoplasm arising in the pelvis.**

There were six postoperative deaths in this group of patients, none due to the urinary diversion.

The remaining patients were observed for periods of from three to sixty months, the mean average eighteen months. During that period, only one patient died (at 42 months) as the result of urinary diversion. In that case death came about because the patient insisted on wearing a Foley retention catheter rather than an ileostomy bag, and the catheter perforated the ileal segment.

In only three of the patients did pyelonephritis develop, and the disease was controlled by giving chemotherapeutic agents. In ten patients, some changes in postoperative intravenous pyelograms were observed.

WITH THE DEVELOPMENT of operative treatment of cancer in the pelvis to a point where it appeared it might be used for permanent control of the disease, it became obvious that urinary diversion operations of most types were unsatisfactory as far as the life expectancy of a patient was concerned. With most of these diversions—cutaneous ureterostomy or anastomosis of the ureters into the intact bowel—there was a high proportion of recurrent ascending renal infection and, consequently, progressive renal damage. It was this damage, rather than the disease for which they were treated, that limited the patients' life expectancy.

Surgeons began seeking urinary diversion of a kind that could provide the patient with a minimum risk to life from recurrent infection, freedom from hyperchloremic acidosis (reabsorption of electrolytes) and an acceptable substitute for the urinary bladder from the esthetic point of view. Under ordinary circumstances, colostomy of itself represents no problem to the average patient. Patients are trained to bowel movement once a day by means of an irrigation and then go about without the burden of a colostomy bag or appliance other than a flat of gauze placed over the artificial anus. When it becomes necessary to utilize the intact bowel with a colostomy for the excretion of urine, an esthetic problem is automatically created.

Bricker[1] resolved this problem when he employed an isolated ileal loop for the diversion of the urinary stream, utilizing Cordonnier's[4] method of ureterointestinal anastomosis. Bricker isolates a segment of ileum 8 to 12 inches in length from the intestinal tract. The continuity of the intestine is reestablished by means of an end-to-end ileo-ileostomy, utilizing two layers of interrupted silk sutures for the anastomosis. This provides an isolated segment of intestine with an intact supply of blood. The proximal end of this segment is closed, usually in two layers, by means of interrupted black silk sutures; and the ureters are anastomosed to this isolated segment at the level of sacral promontory (Figure 1). For these anastomoses 5-0 chromic catgut is used in an interrupted fashion to produce an end-to-side, mucosa-to-mucosa anastomosis of the ureter to the ileal segment. It takes four to six such sutures to produce a satisfactory approximation of ureter to bowel. This junction is reinforced by two to four basting sutures of fine black silk which comprise a "second" layer for the anastomosis. The distal end of ileum is then brought out through a stab wound in the right lower quadrant of the abdomen. This is done after a stab wound has been prepared and a piece of skin approximately 2.5 cm. square is excised from the skin about the stab wound. The edges of ileum, which are withdrawn through the stab wound, are then sutured to the skin by means of interrupted fine black silk sutures. No attempt is made to close the defect in the lumbar gutter of the right lower quadrant of the abdomen. At the close of the operative procedure, a latex bag is cemented over the ileostomy opening to collect the urine.

On theoretical grounds, this type of urinary diversion seems best because it provides a ureteral anastomosis that is less liable to stricture and a single aqueduct that makes the collection of the excreted urine a relatively simple affair. This diversion provides a lessened likelihood of stricture at the ureteroileal anastomosis and an unobstructed flow of urine,

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TABLE 1.—*Total Case Material*

Female genital		18
Cervix	12	
Corpus	3	
Other	3	
Bladder		16
Colon		7
Rectum	6	
Sigmoid	1	
Radionecrosis and fistula		2
Total		43

TABLE 2.—*Kinds of Operations in 43 Cases in Which Ureteral-ileal Anastomosis Was Carried Out*

Kind of Operation	Number	Postoperative Death	Operative Mortality (Per Cent)
Total exenteration	23	5	21.7
Anterior exenteration	4	0	....
Total cystectomy	14	1	7.1
Urinary diversion	2	0	....
Total	43	6	14.0

which is collected in the bag. With no obstruction to the continued flow of urine, the incidence of recurrent ascending renal infection is reduced. Also the entire urinary diversion is free of the intact gastrointestinal tract and, therefore, there is no contamination by the fecal stream.

The purpose of the present communication is to review the author's experience with this type of urinary diversion in the treatment of patients with pelvic cancer and allied problems. The case material has been drawn from several sources* and covers a period of time from 1949 to 1955. A few of the earlier cases in this series from the Ellis Fischel State Cancer Hospital were included in a review of 106 such urinary diversions that were reported by Bricker.[2]

In all, there were 43 cases in which ileal segments were employed to divert the urinary stream (Table 1). Forty-one of these operations were carried out in conjunction with the primary or secondary surgical treatment of neoplasms arising in the pelvis. The remaining two cases were instances in which urinary fistulae had developed following heavy irradiation to the pelvis in the treatment of cancer of the cervix. The operations that were employed ranged from total pelvic exenteration in the treatment of pelvic cancer to simple urinary diversion in the cases of radionecrosis and urinary fistulae (Table 2). In the entire series, there were six postoperative deaths, none of them attributable to the urinary diversion.

*The Veterans Administration Hospital, Jefferson Barracks, Mo., The Veterans Administration Hospital, Aspinwall, Pa., The Ellis Fischel State Cancer Hospital, Columbia, Mo., and the Los Angeles Tumor Institute, Los Angeles.

Figure 1.—The region of the sacral promontory with the uretero-ileostomies displaced upward to demonstrate the anastomotic site.

There were 37 cases for long-term observation postoperatively. The patients were examined frequently until they died or up to the time this report was prepared. Autopsy was not done in many of the cases in which the patient died, but owing to the frequency of examination, the cause of death—whether cancer or other cause—could definitely be determined in all instances. This was accomplished either by biopsy or x-ray examination, which provided concrete evidence of metastatic disease. The shortest period of postoperative observation in the series was three months and the longest was 60 months. The mean was 18 months. Only four patients in the group were observed for less than six months; and of these four patients, three died of persistence of the cancer for which they were originally treated in less than six months. The other patient was living at the time of this report. Eighteen of the patients died during the period in which the series was under observation. In 17 cases death was the result of surgical failure to control the neoplasm for which the patient was treated. One death was attributable to the urinary diversion. The patient was a man who had had pelvic exenteration for locally advanced adenocarcinoma of the rectum.

TABLE 3.—*Complications in 43 Cases in Which Ileal-Ureteral Anastomosis Was Carried Out*

Complication	Number	Incidence (Per Cent)
Stricture of ileostomy	6	14.0
Recurrent pyelonephritis	3	7.0
Stricture of ureter	3	7.0
Prolapse of ileostomy	2	4.6
Perforation of segment	1	2.3
Sensitivity to adhesive	1	2.3
Hyperchloremic acidosis	0	0.0
Uremia	0	0.0
Total	16	37.1

TABLE 4.—*Hydronephrosis and Hydroureter in Postoperative Intravenous Pyelograms*

	Number	Incidence (Per Cent)
Bilateral:		
Minimal	1	2.3
Moderate	2	4.6
Severe	3	7.0
Unilateral:		
Minimal	1	2.3
Moderate	1	2.3
Severe	2	4.6
Total	10	27.0

Rather than wear the usual bag which is glued to the skin, he insisted on wearing a Foley catheter in the ileal segment. This he connected to a leg bag which acted as a urinary reservoir. Forty-two months after the pelvic exenteration, the patient perforated the ileal segment with the catheter and, as a consequence, died. Autopsy was done in a distant city and a report forwarded to the author. At the time of autopsy there was no evidence of persistent cancer; the patient had died of a peritonitis following the perforation of the ileal segment.

Sixteen patients had nonfatal complications of the urinary diversion (Table 3).

Stricture of the ileostomy stoma occurred in six patients (Figure 2). This is not at all a serious complication, since the stricture is always located at the skin level. Such strictures are usually easily dealt with under local anesthesia as an office procedure. Stricture of the ureter occurred in three cases—in two cases at the uretero-ileostomy site, and in the other about five centimeters above the uretero-ileostomy, apparently owing to previous irradiation damage there. For operation to relieve stricture, hospitalization is necessary.

Recurrent pyelonephritis developed in three patients. These recurrent episodes of renal infection were on the whole readily controlled by chemotherapeutic agents; and during the course of follow-up, two of the three patients subject to recurrent attacks of ascending renal infection died as a result

Figure 2.—A close-up view of stenotic ileostomy. To the left and above the center of the picture, a stenotic opening approximately 3 mm. in diameter may be seen.

Figure 3.—Typical prolapse of an ileal segment.

of persistence of the primary cancer and generalized carcinomatosis.

In two cases prolapse of the bowel through the artificial anus occurred (Figure 3). In both cases surgical repair was effected. In one of these cases prolapse recurred twice before being successfully repaired. This complication does not affect the urinary diversion any more than prolapse affects the course of the patient who has had ileostomy because of ulcerative colitis.

Soon after operation, one patient had severe sensitivity reaction to the adhesive material used to hold the latex reservoir to the skin. Several days of hospitalization was required, but after the skin about the ileostomy was toughened, this sensitivity was controlled.

Renal damage as evidenced by changes in the intravenous pyelogram was noted in ten cases (Table 4). It should be noted at this point that of a total of ten patients with preoperative renal damage, as evidenced by intravenous pyelograms, eight were improved after the urinary diversion.

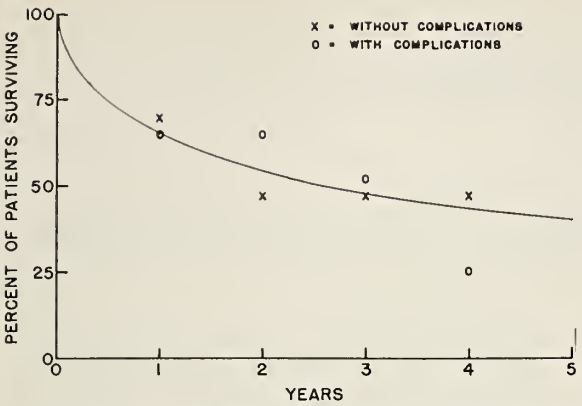

Chart 1.—Survival data on 37 of 43 patients who had ileal-ureteral anastomosis for urinary diversion. Data excludes five cases in which patient died in postoperative period.

In order to determine the degree to which these complications of urinary diversion into an ileal segment have affected the ultimate survival of these patients, accumulative survival rates were plotted (Chart 1). It is to be noted that a single curve can describe the final fate of patients with or without late complications referable to ileal segment diversion. In terms of numbers, the distribution of patients with and without complications was of about the same order of magnitude. This implies that failure of treatment of the malignant neoplasm rather than the urinary diversion limits the life of the patient.

Of 16 patients who had late complication of urinary diversion, four had preoperative evidence—changes in intravenous pyelograms—of involvement of the upper urinary tract. In the group without late complications, six had evidence of urinary tract involvement as determined in the same manner. Apparently preoperative involvement of the urinary tract does not contribute to the development of late complications of the urinary diversion but, rather, describes the advanced state of the primary disease.

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The Management of Allergic Patients

The Role of the Internist

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• **There has been an increasing trend in the United States toward intensive specialization in allergic diseases. Whereas the tendency toward specialization has led to greater knowledge of the scientific aspects of allergic phenomena, it has somewhat diverted the specialists' attention from the many clinical problems that await solution.**

Effective treatment of the allergic patient depends in no small measure on the broad viewpoint and clinical experience of the internist. This fact has been reemphasized by the growing awareness of the significance of the secondary or precipitating causes, such as climatic, nutritional, hormonal and psychogenic factors which influence allergic manifestations. Overemphasis on specialization in allergic diseases with their wide ramifications may defeat the main objective—a successful therapeutic result.

To meet this challenge, the internist should be trained in allergy and yet retain a broad approach to the more basic problems of internal medicine. This objective may be attained by certain modifications in undergraduate medical instruction in allergy. Postgraduate training sponsored by our national allergy societies affords internists an excellent opportunity to advance their knowledge of clinical allergy.

During the past 25 years, we have witnessed an increasing trend in the United States toward specialization in internal medicine. The cardiologists, endocrinologists, hematologists and allergists have now taken their place with the subspecialists as detached workers in their several fields.

The intensive cultivation of the allergic field in the United States has been furthered by the organized efforts of our two national societies for the advancement of knowledge of allergic phenomena, and by the activity of the many regional and state organizations. This has led to valuable clinical and laboratory studies on allergic diseases.

Allergic phenomena are matters of moment in many basic sciences. Physiologists have made important contributions to knowledge of the part which autonomic innervation of smooth muscle plays in the production of symptoms, and pathologists have added greatly to knowledge of the tissue changes in allergic reaction. Immunologists and immunochemists, by their research, have made possible a clearer understanding of the mechanisms involved. It is obvious that the clinician who must devote his efforts to the diagnosis and treatment of allergic diseases has neither the time nor perhaps the training to aid in the solution of the more fundamental problems.

Whereas emphasis on specialization has added greatly to the science of allergy, it has to some extent diverted the specialists' attention from the many clinical problems which must be solved if success in treatment is to be achieved. It is for this reason that there has been a growing awareness during the past decade of the significance of the secondary or precipitating causes of allergic diseases. This has stressed the need for a broader clinical approach and the importance of the internist's role in the management of patients with allergic reactions.

The first classical descriptions of hay fever and asthma were given by clinicians in the early and latter part of the nineteenth century.[4] It is of historical interest that many of these careful observers had the diseases they so accurately described.

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John Bostock, an English physician and physiologist, was the author of the first clinical description of hay fever.[5] In 1819, he read a paper before the Royal Medical and Chirurgical Society of London on a "Case of a Periodical Affection of the Eyes and Chest"[2] in which he presented to the members the history and clinical symptoms of a seasonal disease which had troubled him since childhood.

Bostock, however, did not recognize that pollen was the cause of his symptoms. That pollen was an etiologic factor in seasonal hay fever was proved by the crucial clinical experiments of Charles Harrison Blackley of Manchester, England, and Morrill Wyman of Cambridge, Massachusetts. Blackley[1] first published his observations in a treatise entitled "Experimental Researches on the Causes and Nature of Catarrhus Aestivus (Hay Fever)"; and Wyman, in an exhaustive monograph on "Autumnal Catarrh,"[8] published in 1876, made the first noteworthy American contribution to etiologic knowledge with the observation of the association of hay fever and the pollen of ragweed.

The accuracy of the observations made by these investigators and the logical deductions from them are indeed remarkable, since their work was carried out before controlled experiment had come into general use in medicine.

Another clinical contribution of major importance was the publication in 1860 of Salter's monograph on "Asthma: Its Pathology and Treatment."[7] Asthmatic himself, Salter had excellent opportunity to study carefully his own symptoms and, in particular, the reflex phenomena which he believed to be, in many instances, the precipitating causes of the attacks. His description of asthma due to animal emanations, especially that caused by exposure to the domestic cat, should be read by every student interested in the subject.

In 1906, Clemens von Pirquet, distinguished for his work on serum disease, vaccination and tuberculosis, suggested the term *allergy* for the changed reactivity of the organism following the repeated introduction of pathogenic substances. His researches led to the development of new diagnostic methods for the study of tuberculosis in childhood. They also paved the way to knowledge of the pathogenesis of many other diseases, particularly those of allergic origin.

Another milestone in the development of the science of allergy was the publication in 1911 of Noon's paper on "Prophylactic Inoculation Against Hay Fever."[6] The successful therapeutic results he achieved by desensitization with pollen antigen stimulated intensive clinical and laboratory studies on the underlying causes of allergic phenomena and the mechanism of specific treatment.

The intensity of interest given to these experimental and immunologic studies during the half century after von Pirquet made his contribution, diverted attention from the many clinical problems which beset patients with allergic disease. The effective treatment of these patients depends, to a great extent, on the broad viewpoint and clinical experience of the internist. Too intensive specialization in allergic diseases, with their wide ramifications, may defeat the main objective, which should be a successful therapeutic result. For this reason the internist should be trained in allergy and yet retain a broad approach to the more basic aspects of internal medicine.

Undergraduate instruction in allergic diseases has been for the most part, inadequate, in view of the fundamental importance of allergic manifestations in the practice of medicine. Teachers of this subspecialty have made many practical suggestions in order to correct this deficiency. A plan found workable in some medical schools in the United States is to give instruction in subjects so widely ramified as allergy, as a part of the individual basic sciences.[3] Such a plan would lessen the trend, all too prevalent in our medical schools, toward overburdening the curriculum.

Thus a course in immunology and immunochemistry could include a discussion of sensitization in experimental animals and in man and of the fundamental mechanism of anaphylaxis and human hypersensitivity. The physiologist and the pathologist could devote some time to the physiologic and pathologic aspects of the allergic reaction and the pharmacologist to an evaluation of the common adrenergic and anticholinergic drugs, antihistamines and the adrenal corticosteroids in the therapy of allergic diseases.

These basic facts and theories may then be coordinated with the common clinical manifestations of allergic reaction, such as hay fever, asthma, eczema and urticaria. This integration of the subject could be achieved in a limited number of lectures and the presentation of clinical cases typical of the various kinds of allergic disease either in the outpatient allergy clinic or in the hospital wards. A qualified member of the teaching staff could carry out this assignment. He should possess not only training in internal medicine or pediatrics but also the essential clinical and technical experience in the diagnosis and treatment of allergic diseases. The latter may be acquired either by postgraduate instruction or work in an organized allergy department of a medical school or hospital. If one may judge by present-day trends, the internist in the future is certain to play a greater role in the management of the allergic patient.

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Vaginal Cytology

Results in 3,000 Consecutive Women with "Normal" Cervices

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• **Cytologic examination of 9,000 specimens of mucoid material taken from the cervices of 3,000 women who had no clinically observable vaginal abnormality was carried out. Sixteen of them had carcinoma, later proved by tissue examination. In 15 cases the lesion was epidermoid carcinoma of the cervix and in one was adenocarcinoma of the endometrium. Routine use of examination of mucoid specimens easily and painlessly obtained from the vagina should contribute substantially to a lower mortality from pelvic carcinoma.**

IN THE LAST 15 years cytologic examination of material from the cervix and vagina has become routine in most gynecologic clinics and in many private offices. The results in early diagnosis and prompt treatment of cancer of the cervix have helped to lower the mortality rate associated with this disease.

Although the literature contains many reports of the incidence of detection of carcinoma by cervical and vaginal smears, there is great variation in the data. In large series the range is from 0.9 per cent to almost 6 per cent of patients with proved carcinoma detected by this method. Obviously these data are colored by the type of practice involved and none are truly representative. Clinics dealing only with gynecologic patients have a higher rate because the patients examined have specific complaints referable to the pelvis. In general, reports from cytodiagnostic centers show relatively high proportions of diagnosis of cervical cancer, because most of the specimens sent in for examination are from patients with some clinical signs of cervical abnormality.

Data as to the number of carcinomas that would be found in routine examination of cervical material from an unselected cross-section of patients are still lacking. The criticism has been raised that such a screening procedure would be excessively costly, and that it would be far more practical to take mucoid material or tissue for biopsy only if the patients have signs or symptoms of abnormalities such as erosions, lacerations and cervicitis. The purpose of the present investigation was to determine just how many cases of carcinoma of the cervix would be missed if such a procedure were followed.

MATERIAL AND METHOD

In a medical group, routine screening by the Papanicolaou method was done on women over the age of 30 by the departments of obstetrics and gynecology, internal medicine, and surgery. Notes were made by the examining physician as to whether there was any apparent abnormality of the cervix. All cases in which the patient had erosion, lacerations, polyps or palpable abnormality were excluded from this series. Only those in which the cervix was considered normal were included. Nine thousand specimens from 3,000 consecutive cases of women with "normal" cervix and vagina are the material of this report.

Three specimens were taken from each patient. One was obtained by rotating a cotton tipped applicator in the endocervix, another by circumferential scraping of the squamo-columnar junction with a wooden Ayre spatula, and the third by gathering secretion from the posterior fornix on the opposite end of the spatula. All specimens were obtained after the insertion of a moistened vaginal speculum and before the usual bimanual examination with the lubricated gloved fingers. This avoided contamination of the specimens by vaginal jelly. The specimens were immediately placed in an ether-alcohol mixture and were later stained by a modified Papanicolaou procedure.

The age range of patients in the series was from 30 to 82 years. Specimens positive for cancer were found in an age range of 31 to 74 years.

No attempt has been made to include for discussion in this communication the proportion of false negative and false positive results. Nor were results in the present series compared with results in cross-sections of all patients regardless of the condition of the cervix. Statistics on these aspects are being prepared for later report.

In all cases in which the cytologic examination was positive for cancer, biopsy and curettage was done—repeatedly in many cases. Only cases in which carcinoma was proved by biopsy or curettage

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were included in the computation of results. Patients having metaplasia and the so-called "precancer complex" were regularly reexamined and if definite malignant changes developed, as identified in biopsy specimens, they were included in the group used.

RESULTS

Sixteen proved cases of carcinoma were found in the 3,000 women who had no visible or palpable evidence of any abnormality of the cervix—an incidence of slightly more than one-half of 1 per cent. Fifteen were epidermoid carcinomas of the cervix and one was an early endometrial adenocarcinoma. Five of the squamous cell carcinomas occurred in cervical stumps left following subtotal hysterectomies. In seven cases the lesion was noninvasive carcinoma in situ.

DISCUSSION

Further improvement in the mortality rate associated with cancer of the cervix depends in some degree upon diagnosis before the lesions have reached a clinically suspicious stage. Cytodiagnosis is of inestimable value in the detection of unsuspected cases of carcinoma of the cervix and uterus.

Traut and Benson said: "Biopsy is a *focused* cancer test, whereas the use of stained smears and films of aspirated fluid, employing criteria of malignancy is a diffuse biopsy method. Thus they can reveal the smallest cancers or earliest malignant tendencies in the uterine cavity, the cervical canal, or portio. Cancer cells shed more rapidly than normal elements, and the vagina forms a natural repository where they collect."

There is no limit to the number of specimens that can be obtained. The patient is not subjected to pain. Specimens may be obtained as often as desired. They give evidence earlier, and from a larger area, than does tissue biopsy. Obtaining specimens at routine intervals gives added incentive to the patient to have periodic examinations.

Examination of vaginal mucoid specimens is a screening or sorting procedure only. When results of cytologic examination are positive for cancer, biopsy and curettage are absolutely necessary. When results of tissue biopsy and of mucoid material do not agree, repetition at regular intervals is mandatory. It is typical that exfoliation of malignant cells occurs in "showers." Hence results of examination of one specimen may disagree with those on another specimen taken at a different time.

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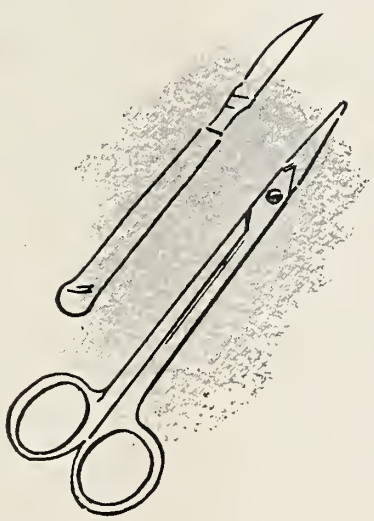

CASE REPORTS

Recurrent Meningitis Due to E. Coli, With Recovery

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A FIVE-WEEK-OLD Caucasian girl, admitted to the Los Angeles County General Hospital Communicable Disease Unit on March 19, 1956, had been perfectly well until she began vomiting after feedings two days before admission. On the day preceding admission, a high fever developed and the patient seemed to be in pain when her legs were moved. There was no history of diarrhea or upper respiratory tract infection and no known exposure to communicable diseases.

On admission, the pulse rate was 140, the respirations 36 per minute, the temperature 101.6°F. rectally, and the body weight 8 pounds. The patient appeared acutely ill and was fretful on extension of the legs. No abnormalities of the skin, the fontanels, the ears and throat or the lungs were noted. There were no signs of meningeal disease. A specimen of spinal fluid was cloudy and contained 5,900 cells per cu. mm.—31 per cent polymorphonuclear cells. One cubic centimeter of spinal fluid reduced six drops of Benedict's solution. There was a 3 plus reaction to a Pandy test. A Gram-stained specimen of the fluid showed Gram-negative rods. A culture of material swabbed from the throat on admission grew Alpha streptococcus viridans, Staphylococcus albus and diphtheroids. Cultures of blood and spinal fluid grew E. coli which were sensitive to streptomycin, aureomycin, chloramphenicol, terramycin, achromycin, neomycin and polymyxin. The blood urea nitrogen content was 15.0 mg. per 100 cc., carbonate content 20 mEq., and potassium 5.6 mg. per 100 cc. The hemoglobin content was 8.5 gm. per 100 cc. of blood, and leukocytes numbered 5,700 per cu. mm. —18 per cent polymorphonuclears.

The infant was treated with intravenous fluids containing potassium penicillin, chloramphenicol and adrenocortical extract, together with the usual vitamins. She also received by clysis 6 molar sodium lactate containing sulfadiazine and sulfamerazine. Five hours after admission, the pulse increased to 160 and the abdomen became tense. A series of epinephrine injections was given, a nasogastric tube was passed, and 0.25 cc. of Parenzyme (trypsin) was given intramuscularly every 6 hours.

In the succeeding days the infant improved clinically. Throughout the hospital course the urine was examined daily for sulfa crystals, and the pH of the urine was maintained on the alkaline side. In an x-ray film of the chest on March 12, the only abnormality was patchy density in the left upper lung. Lumbar puncture was attempted on March 13 but was unsuccessful. On March 17 lumbar puncture was successfully carried out and the pressure was 150 mm. of water. The fluid was clear and xanthochromic. It contained 36 cells per cu. mm.—5 per cent polymorphonuclears. One cubic centimeter of fluid reduced 7 drops of Benedict's solution. Reaction to a Pandy test was 1 plus. An electroencephalogram was unsuccessful because of the patient's moving and crying. Leukocytes in the blood numbered 12,000 per cu. mm.—60 per cent polymorphonuclears. On March 19, the hemoglobin was less than 7.5 gm. per 100 cc. of blood and leukocytes numbered 11,600 per cu. mm.—63 per cent polymorphonuclears. On March 22, the hemoglobin still was less than 7.5 gm. per 100 cc. and the leukocyte content was 8,800 per cu. mm. with 48 per cent polymorphonuclears. On March 23, a specimen of spinal fluid was clear. It contained 45 cells per cu. mm., none of them polymorphonuclear. One cubic centimeter reduced 3 drops of Benedict's solution, and the Pandy test reaction was 1 plus. The hemoglobin content was 7 gm. per 100 cc. of blood and leukocytes numbered 21,200 per cu. mm., 42 per cent of them polymorphonuclear cells. At this time 45 cc. of whole blood was infused through a vein in the scalp. The following day the hemoglobin was 9 gm. per 100 cc. An additional 30 cc. of whole blood was infused and on March 26 the hemoglobin was 10 gm. per 100 cc. Leukocytes numbered 10,800 per cu. mm.—52 per cent polymorphonuclear cells. On March 28, lumbar puncture was carried out and the fluid was clear with 33 cells per cu. mm., none of them polymorphonuclear. The sugar content was normal and the Pandy test reaction was 1 plus. Leukocytes in the blood numbered 9,700 per cu. mm., 36 per cent of them polymorphonuclear. Treatment was stopped on this day.

The child remained afebrile from March 12, 1956, until discharge and continued bright and alert. No neurological impairment was observed.

On April 6 lumbar puncture was attempted but

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Submitted August 10, 1956.

was unsuccessful. Leukocytes numbered 10,600 per cu. mm. of blood, 50 per cent of them polymorphonuclear. The patient was discharged April 7 with an appointment for an electroencephalogram in one month. No organisms grew on culture of any of the specimens of spinal fluid obtained during the stay in hospital with the exception of the specimen taken at the time of admittance.

On April 8 the parents returned to the Communicable Disease Unit with the infant, stating that the child had become irritable and vomited the evening feeding on the day she came home from the hospital. She had slept fitfully during the night and at 10:30 next morning the temperature was 102°F.

The patient was readmitted and the temperature at that time was 102°F., the pulse rate 142, and respirations 38 per minute. Except for slight engorgement of vessels in the posterior pharynx, no abnormality was noted in the ears, nose and throat. No nuchal rigidity or other meningeal signs were present. Lumbar puncture was attempted but was unsuccessful. Cisternal puncture was done and the fluid pressure was 110 mm. of water. The fluid was xanthochromic and it contained 1,232 cells per cu. mm.—60 per cent polymorphonuclear cells. One cubic centimeter of fluid reduced 7 drops of Benedict's solution. Reaction to a Pandy test was 1 plus. Hemoglobin content of the blood was 9 gm. per 100 cc. Leukocytes numbered 18,500 per cu. mm.—72 per cent polymorphonuclears. The urea nitrogen content was 24 mEq., carbonate 23 mEq. and potassium 6.1 mEq.

Chloramphenicol, streptomycin and sulfadiazine were given by vein and sulfamerazine by clysis. Two days later, on April 10, the child was reported to have had recurrent episodes of unconsciousness with upward-rolling of the eyes, each episode lasting 5 to 30 seconds. One such episode was accompanied by a tetanic convulsion. The temperature at this time was 100.8°F. rectally and the pulse rate 180. Chloral hydrate was given per rectum, which controlled the convulsive seizures. On April 11, the patient became afebrile and had no more convulsions.

A lumbar puncture was performed April 13, and the fluid was xanthochromic and "ground glass" in appearance. The pressure was 40 mm. of water and there were 49 cells per cu. mm., none of them polymorphonuclear. The sugar content was normal and the Pandy reaction was 1 plus. On April 16, the infant was given 150 cc. of whole blood in a vein in the scalp. Five days later the hemoglobin content was 14 gm. per 100 cc. of blood. Leukocytes numbered 6,100 per cu. mm.—24 per cent polymorphonuclears. The following day lumbar puncture was done and the fluid was clear. It contained 23 cells per cu. mm., none of them polymorphonuclear. The sugar content was normal and the Pandy test reaction was 1 plus. Therapy was discontinued and the patient remained afebrile and continued to gain weight. On May 15, lumbar puncture was done again. The fluid was clear, the cell content 8 per cu. mm., with no polymorphonuclear cells, the sugar content normal. There was faint reaction to a Pandy test. The hemoglobin content of the blood was 12 gm. per 100 cc., and leukocytes 6,300 per cu. mm., with 15 per cent polymorphonuclears.

No organisms grew on cultures of all the spinal fluid specimens obtained during the second period of hospitalization. The patient was discharged on May 16.

SUMMARY

A case of meningitis due to E. coli, with recurrence and recovery, is presented.

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Tetanus with Complete Recovery

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A SIX-YEAR-OLD Mexican boy fell while playing and struck his abdomen. Next day he began to have severe abdominal pain and rigidity. In the succeeding two days the condition became increasingly severe. Generalized stiffness developed and the patient could not open his mouth. He was then (four days after injury or three days after symptoms were first noted) taken to a physician who referred him to the Communicable Disease Unit of the Los Angeles County General Hospital on March 3, 1956, on suspicion of poliomyelitis, meningitis or neglected acute abdominal disease.

When the history was taken it was noted that the boy was accustomed to playing barefooted and had never received immunization of any kind.

The patient appeared to be acutely ill. He could open his jaws only about a half inch. There was pronounced abdominal muscle rigidity and stiffness of the neck, and moderate generalized muscular rigidity made it difficult to flex the arms and legs. In addition the patient had multiple small splinters and pieces of dirt ground into the skin of both hands and feet, an infected granulating lesion on the right great toe and another open granulating lesion on the left index finger.

A specimen of spinal fluid was obtained immediately. It was clear, contained 3 cells per cu. mm., one of them polymorphonuclear, and a normal amount of sugar. A Pandy test reaction was negative.

A diagnosis of tetanus was made on the basis of clinical evidence, and therapy was started within a few minutes after the patient's arrival. He was scrubbed with soap and water and skin and intravenous tests for sensitivity to tetanus antitoxin were carried out. Administration of 40,000 units of tetanus antitoxin in normal saline solution intravenously was begun. In addition 40,000 units of antitoxin was given intramuscularly in each buttock, 10,000 units around the left ankle, 10,000 units around the left wrist, and 20,000 units around the right ankle. Surgical debridement of the two larger

From the Communicable Disease Service of Albert G. Bower, M.D., Chief Physician, Los Angeles County General Hospital, Los Angeles 33.

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skin lesions was carried out. The patient, who had begun to have moderate contractions during the foregoing procedures, was sedated with chlorpromazine.

In the following days, intravenous fluids, supplementary vitamins and antibiotics were administered. Every three days 1,500 units of tetanus antitoxin was given to prevent sensitization. Contractions were satisfactorily controlled by a combination of chlorpromazine and chloral hydrate. On the sixth hospital day the patient was able to eat, and intravenous fluid therapy was stopped. On the twelfth hospital day sedation was tapered, and on the 26th day, when rigidity and contractions had completely ceased, it was discontinued.

On about the fifteenth hospital day the patient began sweating profusely. Slight epistaxis occurred from time to time. A cardiac murmur along the left sternal border was noted. On the twenty-third hospital day an urticarial rash, generalized adenopathy and irritability developed, and the temperature then ranged from 102° to 103°F. for nine days. An electrocardiogram, x-ray films of the chest, the antistreptolysin titer and results of liver function tests showed no abnormality. No organisms grew on a culture of blood. Relative lymphocytosis with about 25 per cent atypical lymphocytes was noted upon examination of specimens of the blood, but heterophil titers, repeatedly determined, were within normal limits. The symptoms were interpreted as serum sickness, a reaction to the tetanus antitoxin, which was then discontinued on the twenty-second hospital day.

Following this episode, the patient became afebrile and remained so. X-ray films of the spine showed no fractures, and the patient was discharged on the forty-eighth hospital day. The parents were advised that active tetanus immunization should be begun within the following six weeks.

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Echinococcus Cyst with Intrabiliary Rupture

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Echinococcus is an uncommon disease in California. Since many cases are asymptomatic, the present case, in which rupture into the biliary tract resulted in obstructive jaundice, is reported as a reminder of the existence of Echinococcus granulosus in California. This disease, as well as other "tropical diseases," is occurring with increasing frequency in subtropical and temperate regions. Since echinococcus is not a notifiable disease in California, data on the incidence are not available. Johnstone[2] expressed belief that the incidence is higher than is generally recognized, and he said that "apparently clinicians are not even suspecting the presence of the parasite." Information on the surgical complications of echinococcus cyst is rather scant in American textbooks and journals, the best reports having originated in other countries. When rupture of the cysts occurs it may be into the bile ducts, the general peritoneal cavity, the thorax, or the alimentary or urinary tract.[1,3]

Submitted August 6, 1956.

REPORT OF A CASE

The patient was a 27-year-old man of Mexican descent who had been born in Los Angeles and had lived in California all his life. He was first observed in the Tulare County Hospital in December, 1955, with a history of severe, cramping pain in the right upper quadrant of the abdomen, with jaundice and dark urine, for the preceding two weeks. In the three days before entering the hospital the patient had had chills and fever. At examination upon admittance to the medical service, pronounced icterus, tenderness in the right upper quadrant of the abdomen and enlargement of the liver were noted. The laboratory reported an icterus index of 54 units, total bilirubin content of 4.3 mg. per 100 cc. of blood. Hemoglobin content was 12.2 gm. per 100 cc. and leukocytes numbered 11,800 per cu. mm. The result of a serologic test for syphilis was negative. A cephalin cholesterol flocculation test was negative for liver impairment. The content of alkaline phosphatase, 15.8 mg. per 100 cc. of blood. Roentgen studies of the upper gastrointestinal tract showed

Figure 1.—Cholangiogram 25 days after operation. Note contrast medium in intrahepatic cyst.

Figure 2.—Cholangiogram, four months after operation, showing return toward normal.

some compression of the lesser curvature of the stomach, evidently from the liver. The temperature ranged between 101°F. and 102°F. for three days and then became normal. The patient was treated with penicillin and was discharged after 12 days with a diagnosis of possible infectious hepatitis. Ten days later he returned because of fever and pain. This time the cephalin flocculation was 2 plus, thymol turbidity 18 units, and bilirubin 3 mg. per 100 cc. Biopsy of a specimen of the liver was reported as showing infectious hepatitis.

Pronounced jaundice continued and the patient had pain and recurrent fever. The temperature rose to 104°F. and the leukocyte content of the blood to 15,400 per cu. mm.

At operation the right lobe of the liver was observed to be practically replaced by a giant cyst. This cyst posteriorly had expanded anterior to the right kidney as a large, thin-walled mass. The common duct was approximately 4 cm. in diameter. It was opened and multiple daughter cysts of various sizes were evacuated from it. Then digital and instrumental exploration of the communicating cystic cavities in the liver was carried out. The main cyst was in the right lobe, but there were several smaller cysts in the left lobe. More than a liter of fluid and daughter cysts of varying sizes were removed and a large T-tube was left in the common duct at the conclusion of the procedure.

Pathologist's Report: The specimen was a large quantity of clear hydatid cysts, varying in diameter from 0.3 to 3 cm. Each hydatid presented a thin wall and was filled with clear, colorless fluid. Accompanying the specimens were irregular fragments of soft grayish yellow membrane, representing wall of the major hydatid cyst from the liver.

Microscopically the wall of each hydatid was observed to be composed of a thin hyaline membrane with serrated lining. In some of the sections through the hydatid, a few cross-sections of tapeworm larvae could be seen.

Diagnosis: Hydatid disease of the liver (Echinococcus granulosus).

Following operation, the septic condition very quickly subsided. As it was felt that daughter cysts were undoubtedly still present within the liver, the T-tube was irrigated daily and small cysts and cyst membranes continued to be passed. The cyst cavities shrank promptly (Figure 1). The T-tube was removed six months after operation* when cholangiograms showed an essentially normal biliary tree (Figure 2).

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Infectious Mononucleosis Complicated by Landry's Paralysis, Requiring Respirator Care

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THE SYNDROME of infectious mononucleosis was first described by Pfeiffer in 1889. He reported it as a disease of the lymph nodes of children and noted that constitutional signs and symptoms were mild. It was not until 1931 that the first reports of neurologic complications of infectious mononucleosis were made. Johansen[12] reported a case of serous meningitis with no glandular involvement and almost no abnormality in the spinal fluid. Epstein and Dameshek[3] noted a patient with stupor initially, then increased protein and cells in the cerebrospinal fluid and, two days later, splenomegaly and generalized lymphadenopathy. Atypical lymphocytes were observed in the blood. The patient was perfectly well six weeks after the onset of the illness.

Since these reports, there has been an increasing number of reports describing neurologic complications of infectious mononucleosis or glandular fever.

*When last observed, 13 months after operation, the patient was entirely asymptomatic. Upon physical examination no abnormalities suggesting recurrent or persistent trouble in the biliary tract were noted.

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Bernstein and Wolff[1] tabulated 34 such reports in the literature from 1931 to 1947 as follows:

	Cases
Serous meningitis	4
Meningitis	10
Encephalitis	4
Meningoencephalitis	4
Meningoencephalitis and polyneuritis	7
Peripheral neuropathy	6
Optic neuritis (with papilledema without increased cerebrospinal fluid pressure)	1

Many investigators have emphasized that some of the "idiopathic" acute nervous system disorders may be associated with infectious mononucleosis, as are many cases of "aseptic meningitis." Furthermore, there may be leukopenia early, then a normal content of cells in the blood or leukocytosis with or without a relative lymphocytosis, but with atypical lymphocytes seen at some time during the course of the illness. Paul and Bunnell's description of the heterophil agglutination test in 1932 has helped immeasurably in the clarification of many of these obscure neurologic syndromes.

The majority of neurologic complications of infectious mononucleosis occur in adults. It has been observed that, even in epidemics of infectious mononucleosis, such complications develop in less than 1 per cent of patients; and in males more than in females. There may be changes in the cerebrospinal fluid without any neurologic signs whatsoever. On the other hand, acute neurologic effect may occur without demonstrable change in the cerebrospinal fluid. Bernstein and Wolff[1] stressed that complete recovery from neurologic complications in infectious mononucleosis occurs within a few days to several months in 85 per cent of all cases. However, the spinal fluid may remain abnormal for a longer period of time.

Attesting that infectious mononucleosis is not an innocuous disease and that neurologic forms may leave residual impairment, Motto[17] described a case in which a patient, with encephalitis due to infectious mononucleosis, had nystagmus and right facial paralysis 12 months after the acute phase of the disease. Bernstein and Wolff noted mild motor aphasia and difficulty in concentrating as permanent residual damage. Lawrence[14] reported that respiratory paralysis was the cause of death in seven of 16 fatal cases of infectious mononucleosis.

These reports stress the necessity for hospitalizing such patients where immediate respirator care is available. The complications may progress very rapidly; in a case reported by Durfey and Allen,[2] impairment progressed from monoplegia to complete quadriplegia with bulbar paralysis in a very short time. The case reported herewith is another example of the urgency of such precautions.

Many bizarre neurologic forms of infectious mononucleosis have been reported in the literature. Green[8] described a case of acute hemiplegia and aphasia in which the spinal fluid was completely normal. No abnormal cells were observed in the blood until two weeks after onset of the illness, when atypical lymphocytes were seen. An elevated changing heterophil titer was also noted. Geliebter[7] in 1946 described, for the first time, neurologic infectious mononucleosis in a child. The patient was a ten-year-old girl with lymphadenopathy, malaise and vomiting. There were no meningeal signs, but a lumbar puncture was carried out and the spinal fluid contained 9 mononuclear cells per cu. mm. and total protein of 400 mg. per 100 cc. Diplopia and muscular weakness followed. Poliomyelitis was considered at one time, but a changing heterophil agglutinin titer clarified the diagnosis. Walsh and co-workers[22] reported encephalitis from infectious mononucleosis in an eight-year-old boy. They also report neurologic infectious mononucleosis in an 18-month-old child, the youngest patient of record to have neurologic complications. Cerebellar symptoms also occurred in both of these patients. Walsh and co-workers emphasized that neurologic signs and symptoms may occur in any sequence with relation to other clinical evidence of infectious mononucleosis, or even without any other symptoms. Many investigators have reported neurologic complications concomitant with, days to weeks before or after other clinical manifestations of infectious mononucleosis. Walsh and co-workers further stressed that leukocytosis is not uncommon early and that, in severe neurologic cases, changes in the blood tend to be late. Bercel noted electroencephalographic abnormalities in all of five cases of neurologic infectious mononucleosis observed by him.

Ream and Hessing[19] reported a case ushered in by psychotic manifestations after a week of tenderness of lymph nodes. An electroencephalogram in this case was decidedly abnormal. Cheyne-Stokes respiration and aphasia were noted later. Kalmansohn and co-workers[13] in 1953 reported the sixth known case of coma complicating infectious mononucleosis. In the case reported it was especially interesting because the patient was 49 years of age, had no symptoms of neurologic disease and had permanent residual personality changes of considerable degree. Furthermore, there was no clinical evidence of infectious mononucleosis. However, the spinal fluid protein content was elevated and an elevated changing blood heterophil titer was reported.

An especially interesting form of neurologic infectious mononucleosis is the so-called "Guillain-Barre" syndrome. Guillain, Barre and Strohl in 1916[9] described cases of acute polyradiculoneuritis with pronounced increase in cerebrospinal fluid protein content without increase in the number of cells. This change in the spinal fluid was termed "albuminocytologic dissociation." Their criteria for the diagnosis of the syndrome were: Albuminocytologic dissociation in the cerebrospinal fluid and preponderance of motor weakness over sensory. They reported the prognosis favorable, usually with complete recovery.

In 1936, Guillain[10] stressed increased spinal fluid protein content, reporting 1,000 to 2,000 mg. of total

protein per 100 cc. as the usual finding. However, in 1937, at a symposium in Brussels, he withdrew many of his previous diagnostic criteria. Now it is conceded that hyperalbuminosis of the cerebrospinal fluid may frequently be absent in the early stages, and that it is due to local factors, such as vasodilatation and partial block to drainage of the cerebrospinal fluid due to edema and swelling of inflamed nerve roots. In addition, the outcome of this syndrome is not always benign; in 26 of 126 cases of the syndrome collected from the literature by Fox and O'Conner in 1942, the patient died. In 1949, Haymaker and Kernohan[11] concluded that there was no essential difference between the radiculoneuritis of Guillain, Barre and Strohl, and that of Landry's paralysis; they suggested the name Landry-Guillain-Barre syndrome to emphasize the possibility of fatal outcome. Raftery and co-workers[8] emphasized that evidence points to a virus as the etiologic factor in this disease, with or without a preceding respiratory tract infection. In only three of the 34 cases of the Guillain-Barre syndrome he reviewed did the patient have infectious mononucleosis; seven had upper respiratory tract infections and three had the influenzal syndrome. The remainder had no preceding illness. Garvin[6] noted that the Guillain-Barre syndrome is one of the rarer manifestations of neurologic infectious mononucleosis. Kalmansohn[13] emphasized that, in albuminocytologic dissociation of the cerebrospinal fluid, infectious mononucleosis must be differentiated from infectious neuronitis, poliomyelitis, central nervous system tumors and diabetic neuropathy. The Guillain-Barre syndrome is but one of many postinfectious encephalomyelopathic conditions.

In the few cases of neurologic infectious mononucleosis in which postmortem examination has been done,[8] engorgement of veins and capillaries of the meninges, with infiltration by mononuclear cells into the anterior nerve roots at all levels was observed. Perivascular hemorrhages, mild ganglion cell disease, moderate infiltrations by inflammatory cells in meninges and neuraxes and invasion of posterior roots and spinal ganglia have also been reported.

REPORT OF A CASE

A 14-year-old Caucasian girl was admitted to the Communicable Disease Unit of the Los Angeles County General Hospital on March 24, 1956. Two weeks previously she had had an upper respiratory tract infection with fever, nausea and headache. In four days the patient became entirely asymptomatic without treatment, and according to the physician who had attended her, there had been no abnormality in the pharynx and no splenomegaly or adenopathy. Three days before admittance, the patient began to complain of double vision and right-sided weakness. At that time leukocytes numbered 15,000 per cu. mm. of blood—84 per cent lymphocytes, 34 per cent of them being atypical. No abnormality was noted in the urine. A heterophil agglutinin titer of 1:3,000 after adsorption was reported at this time. The spinal fluid pressure was within normal limits. The fluid was clear; it contained 1 mononuclear cell per cu. mm. and the protein content was 8 mg. per 100 cc.

Two days before admission, the patient complained of stiffness of the neck. She was reexamined by the physician, who noted decreased reflexes in the left side of the abdomen and of the right knee and right ankle, in addition to nuchal rigidity. The patient was then given 40 units of zinc corticotropin (ACTH) intramuscularly daily on March 22, 23 and 24. On the day of entry to the hospital, the patient was reexamined and pronounced weakness of all four extremities and slight bulbar weakness were noted. She was, however, eating and drinking without difficulty.

Upon admittance the rectal temperature was 99.6°F, the pulse rate 100 with rhythm regular, the blood pressure 120/90 mm. of mercury, and respirations regular at the rate of 16 per minute. The patient was in acute distress, with an indistinct nasal voice and difficulty in maintaining respirations, which were shallow. The skin was normal. There was decided ptosis of the left eyelid, but the pupils were normal. Cough and gag reflexes were extremely poor but there was no pooling of pharyngeal secretions. A slight inflammation of the pharynx was noted, but no exudate. The intercostal muscles were completely paralyzed and both diaphragms were weak. There were no meningeal signs or adenopathy. There was question as to whether the spleen was enlarged; it was palpated by one examiner 1 to 2 fingerbreadths below the left costal margin.

Upon neurologic examination, complete left ophthalmoplegia, right external rectus paralysis, bilateral peripheral facial paralysis, poor gag reflex, and deviation of the protruded tongue to the left were noted. Sensations of pain and touch were apparently intact, and there was no demonstrable loss of position sense. Almost complete quadriplegia was noted, more on the right, with all muscle groups involved. The abdominal muscles were very weak, as were the diaphragms. The intercostal muscles were completely paralyzed, and the neck muscles were very weak. Biceps, triceps, knee and abdominal reflexes could not be evoked on either side. The ankle jerk was absent on the right and weak on the left. There were no pathologic reflexes.

Laboratory data

Results of laboratory tests were as follows:

March 24: The hemoglobin content of the blood was 14.2 gm. per 100 cc. Leukocytes numbered 8,500 per cu. mm.—56 per cent polymorphonuclear cells and 44 per cent lymphocytes, 11 per cent of the lymphocytes atypical. The cerebrospinal fluid was clear, contained no cells, a normal amount of sugar and gave negative reaction to a Pandy test. Blood urea nitrogen was 17.0 mg. per 100 cc., carbon dioxide combining power 26.0 mEq. per liter and potassium content 4.1 mEq. per liter. Vital capacity

was 700 cc. (normal for the patient was 2,500 cc.). Tracheotomy was done an hour after admission, and considerable pooling of pharyngeal secretions was noted. The patient was then placed in a tank type respirator and she did fairly well. An electroencephalogram was reported normal.

March 26: The hemoglobin was 12.0 gm. per 100 cc. Leukocytes numbered 9,000 per cu. mm.—37 per cent lymphocytes (11 per cent atypical), 2 per cent monocytes, and 61 per cent polymorphonuclear cells. The heterophil agglutinin titers were 1:7.168 before absorption and 1:3.584 after absorption with guinea pig kidney. (Ten days later, corresponding titers were: 1:7.168 before absorption and 1:1.792 after guinea pig kidney absorption.) The cerebrospinal fluid heterophil titer was reported as negative. The fluid contained 1 mononuclear cell per cu. mm., a normal amount of sugar and total protein of 40 mg. per 100 cc. There was 1 plus reaction to a Pandy test. Protein-bound iodine was 7.5 micrograms per 100 cc. of blood, cholesterol 145 mg. per 100 cc. and the I^{131} uptake was 9.6 per cent. X-ray films of the chest (taken March 26 and 28) were normal. Urine cultures grew gamma streptococcus and Staphylococcus albus.

April 4: Bromsulfalein retention after 45 minutes was nil. Thymol turbidity was 4 units; alkaline phosphatase, 3.5 Bodansky units; clotting time normal.

The patient improved rapidly. On March 29 the speech was noted to be improved. On April 1 the facial paralysis was less noticeable, and the patient was able to move both upper extremities for the first time. By April 17 she could be out of the respirator for eight hours daily and nine days later she had no further need of it.

On April 15 the protein-bound iodine content of the blood was 11.6 micrograms per 100 cc. A culture of the urine on that date again grew gamma streptococcus and Staphylococcus albus.

The patient was discharged on May 23, two months after admission. There was then no significant muscular weakness or other residual impairment, and she was walking fairly well. An encephalogram showed no abnormality. The final diagnosis was infectious mononucleosis with encephalomyelitis (and Landry's paralysis). The patient was given 20 cc. of gamma globulin intramuscularly on the day of admission, and 2,000 micrograms of vitamin B_{12} daily intramuscularly. Otherwise, treatment was entirely symptomatic.

DISCUSSION

The Paul-Bunnell, or heterophil agglutinin test is of especial importance in the diagnosis of infectious mononucleosis, but in a large proportion of cases elevation of titer does not occur. Raftery and co-workers[18] observed that the highest incidence of elevated heterophil agglutinin titer occurred in the second week of the disease, but even at that period there was no significant elevation in 40 per cent of proved cases. After the third week of the illness, elevation of titer occurred in less than 50 per cent of proved cases. Observation of atypical lymphocytes in a specimen of blood often is the only clue to the diagnosis, as in the case presented by Librach.[15] Since a heterophil agglutinin titer of 1:7 to 1:56 before absorption occurs in 80 to 90 per cent of normal persons, differential absorption is often of great help in differentiating infectious mononucleosis from normal states and from serum sickness (in which the titer may be quite high). The differential is as follows:

Normal serum—Absorbed by guinea pig kidney.
Serum from person with serum sickness—Absorbed by guinea pig kidney and beef red blood cells.
Serum from person with infectious mononucleosis—Absorbed by beef red blood cells, but *not* absorbed by guinea pig kidney.

However, according to Raftery[18] the titer of agglutination may vary because of variations in the sheep red blood cell suspensions used, not all sheep having blood of the same value. Moreover, in many cases serum from normal persons contains cold agglutinins for sheep red blood cells. Therefore, the test tubes used in performing the test should be warmed gently. Serial titration tests are especially useful in the diagnosis of infectious mononucleosis.

In 1948, Silberstein and co-workers[20] described the phenomenon of the presence of heterophil antibodies in the cerebrospinal fluid of patients with neurologic forms of infectious mononucleosis. Many investigators since then have not been able to verify the findings, although a few have. Silberstein described a positive qualitative heterophil reaction, but it remained for Freedman and co-workers[5] to describe a positive quantitative heterophil agglutinin titer of 1:28 in the spinal fluid of a patient observed by them. They emphasized how insensitive this test is when done on the spinal fluid, the blood heterophil titer concurrently being much higher.

The differential diagnosis of lymphocytic meningitis and neurologic infectious mononucleosis without lymph node involvement is often puzzling, but can be resolved, as was emphasized by Tidy,[21] by serial heterophil titration tests and observation of "Downey" cells in specimens of blood. Librach[16] urged that in all cases presumptive of poliomyelitis, serial heterophil tests and cytologic examination of the blood be carried out with infectious mononucleosis in mind. Moreover, the disease cannot be considered limited to persons of a particular age group: Fiese and co-workers[22] reported a case of neurologic infectious mononucleosis in a 58-year-old man, and Walsh[22] a case in an 18-month-old child.

The case presented in this report is especially interesting from several aspects:

1. The almost complete lack of clinical symptoms pointing to infectious mononucleosis. (The diagnosis might have been missed had the physician not ordered the necessary blood studies.)

2. The completely normal cerebrospinal fluid in the face of such extensive neurologic involvement.

3. Speculation as to the role corticotropin might have had in the course of the disease.

4. The sudden and extremely rapid severe involvement of practically every voluntary muscle group in the body, without apparent sensory involvement.

5. The extremely high heterophil agglutinin titer in the serum concomitant with "negative" titer in the cerebrospinal fluid.

6. The necessity for the use of a respirator for one month during the course of the illness.

7. The complete recovery of the patient in a period of two months, without residual effect.

Fiese and co-workers[4] used cortisone in treatment and speculated on the effect the drug may have had on the rapid recovery of the patient. However, they acknowledged the possibility that spontaneous recovery would have occurred as rapidly.

CONCLUSIONS

With the exception of bacterial meningitis, infectious mononucleosis must be considered in every acute neurologic syndrome whether or not there are changes in the cerebrospinal fluid—in patients of any age. Clinical manifestations such as enlarged lymph nodes, exudative pharyngitis or splenomegaly may be entirely absent throughout the course of the disease. The only clue to the diagnosis may be an elevated heterophil titer, or the presence of atypical lymphocytes or "Downey" cells in the blood. Leukocytes may be increased in number and the cell differential abnormal, but not necessarily.

Emphasis should be put upon the fact that the condition of patients with neurologic infectious mononucleosis may progress extremely rapidly—in a period of hours or days. These patients should be observed constantly in a hospital where tracheotomy and respirator care are instantly available.

The use of cortisone or corticotropin (ACTH) for treatment of patients with undiagnosed acute neuropathic conditions may be dangerous.

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Contact Ulcer of the Larynx

CHARLES L. RUBENSTEIN, M.D., San Francisco

THERE IS MUCH CONFUSION among laryngologists as to the etiology of contact ulcer of the larynx. Jackson[1] noted that the disease is often mistaken for some other condition. Contact ulcer has been attributed to constant or severe over-use of the voice and to environmental, occupational or habitual exposure to dust, grit, smoke or chemical irritants.

While it is true that the larynx reacts very sensitively to adverse conditions that put a strain on it either through local irritants or by undermining the general physical condition, contact ulcer in the strict sense of the word does not usually occur unless an element of emotional stress is present. Emotional upheavals may influence the biochemical changes taking place in the larynx, thus making the vocal cords a prey to pathological changes. Moses,[2] in an article titled "Vocal Cord Neurosis," said that contact ulcer had too long been considered the result of abuse of the voice, and he expressed belief that allergic sensitivity plays an important role. He cited the case of a singer with a normal larynx who developed a large

contact ulcer on the typical location, posterior end of the left vocal cord, the day before a concert.

While it is almost impossible to draw boundaries between the functional and organic vocal diseases. the personality, the drives, the emotions of the patient are factors that may help a physician to formulate the proper diagnosis and treatment. The following is a case in point.

REPORT OF A CASE

A man, then 30 years of age, upon emigration to the United States in 1929 experienced insurmountable emotionally charged difficulties. It was then that he felt for the first time that something was wrong with his throat. The specialists he called on advised tonsillectomy, which was performed in 1931. The condition was not relieved, however, and in the meantime the difficulties persisted and even multiplied. In 1934 a biopsy of tissue from the larynx was done but no abnormality was noted. The patient remained under observation and treatment by many physicians of different schools without improvement. In 1952 another biopsy specimen was removed, this time from the site of a granuloma, but it was negative for malignant change. In 1953 the patient spent a month at a medical center in Tucson, Arizona, remaining completely silent and undergoing heliotherapy. There was no improvement.

Having done extensive research work in the field of laryngeal tuberculosis, the patient could make knowledgeable examination of his own vocal cords. This he did daily. To facilitate the interpretation of observations, he used a modified hemoglobin colorimetric scale by which color changes were given a definite numerical value.

He noted some anatomical changes in the course of these daily inspections—first engorgement of the vessels in the larynx, then diffusion of redness. At no time was any pachydermatous thickening of the vocal cords observed. At times he noted unilateral perichondritis with ulceration on both local processes, the ulcer on the right side appearing and disappearing, but that on the left always present. Finally, while he was immersed in studying his own case and trying in every way to cooperate with physicians treating him, his difficulties, which had lasted so many years, suddenly came to an end—and with their passing, the emotional torment they entailed was dispelled. Thereupon all the subjective and objective symptoms of contact ulcer ended also.

In looking back over this case, Knight's admonition comes to mind: "Let each patient then be studied as a human being in distress whose manifestations of illness can be understood if enough can be learned about him and who can be treated with a therapeutic program which utilizes this comprehension rather than be viewed as a stranger with annoying complaints and troublesome symptoms to be immediately subjected to strong-arm purging methods."

SUMMARY

The cause of contact ulcer is very little understood, but emotional factors may underline the disease. Awareness of these factors may lead to more rational and successful treatment. A case report stresses this point.

901 California Street, Apt. 105, San Francisco 8.

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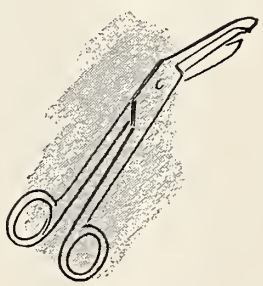

California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Physicians vs. Poliomyelitis

PHYSICIANS—those in private practice and those in public health work—have demonstrated in the past six weeks their basic devotion to the betterment of human health. The rallying point has been the nationwide campaign to secure poliomyelitis vaccinations of all people under age 40.

The surge of response to the challenge of poliomyelitis has been so strong throughout the country that newspapers in all areas have blossomed out with editorials, cartoons and special articles in praise of the medical profession which many editors had previously been inclined to criticize.

Behind this movement lies the planning of national authorities who calculated, in the fall of 1956, that sufficient evidence was on hand to prove the safety and the effectiveness of the Salk vaccine and that, for the first time since the vaccine was introduced, sufficient supplies could be obtained to do a really mass job of inoculating people.

With this planning as basis, the American Medical Association called a meeting—on rather short notice—on January 26 and called the roll to find medical association representatives present from 48 states. the District of Columbia, Hawaii and Alaska. The meeting proceeded rapidly to the unanimous conclusion that now is the time to vaccinate people against poliomyelitis.

Most widely quoted statements from this meeting were those by Doctor Jonas E. Salk, developer of the vaccine, and Doctor George F. Lull, secretary of the American Medical Association. Doctor Salk referred to the present opportunity to deal poliomyelitis a body blow, and Doctor Lull commented that this was medicine's finest opportunity to demonstrate its dedication to the public service.

Currently, newspaper clippings from all parts of the country attest the admiration of editors for the stand medicine has taken. It is obvious that medical societies throughout the United States have taken the poliomyelitis program seriously and have used their organizational skills and techniques to see that a good job is done.

At home, the Council of the California Medical Association voted without dissent to cooperate with public health authorities to work for the vaccination of all Californians under age 40. Details of accomplishing this objective were left to the discretion of the county societies and a meeting of county executive officers has demonstrated the fact that the local societies have lost no time in setting up their own plans, rolling up their sleeves and going to work.

By and large the county-by-county approach to this broad program has been to cooperate in public mass vaccination programs, to encourage private groups to bring out their members for poliomyelitis vaccination and to urge private patients to visit their own physicians for inoculation. In several counties the local society members have adopted low fees for this service as a means of encouraging patients to make appointments.

With all the enthusiasm engendered for this program. it will be especially disappointing to meet stumbling blocks. However, such obstacles must be anticipated in any program of this magnitude. Already there are reported shortages of vaccine in commercial channels, a situation which is being met by asking the more northern areas of the country to defer to the earlier poliomyelitis seasons in the more southern sections and to delay their own programs until vaccine production and distribution can catch up with the tremendous demand created by the nationwide program.

California, with some 6,000,000 citizens eligible to participate in the plan, is bound to have some setbacks due to vaccine shortage, local inertia or other causes. However, if a large proportion of

eligible recipients end up with the protection offered by the vaccine, a good job will have been done and the ultimate elimination of poliomyelitis will be a foreseeable goal.

The zeal with which the campaign has been attacked in nearly all parts of the state argues for a splendid aggregate result. The county medical societies and their officers and members are to be congratulated on their performance. Bouquets are also due the state, county and local health officers who have made their offices the focal point in the district-by-district campaign and have provided invaluable leadership.

Legislative Time Again

WITH THE RECONVENING of the California State Legislature in the second portion of its bifurcated session, the picture of prospective medical legislation begins to clear. The five weeks' interval between the initial bill-introduction meeting and the current bill-consideration session has provided the time needed for analyzing and evaluating the myriad proposals tossed into the gristmill of the state's lawmakers.

The record shows more than 7,000 proposals put before the 120 men and women who make up the two houses of the Legislature. Medicine ordinarily expects about 10 per cent of these measures to have some bearing on the public health or the practice of medicine; this year the percentage seems to be a little less but there are still some 450 bills which will bear watching.

Among these are the perennial proposals to grant rights to selected individuals on the basis of legislation rather than education. These "fringe" bills would set up new examining and licensing boards, would broaden the legal scope or practice of some persons already given a limited license or would, in effect, legalize a change in name for some practitioners who apparently would seek this means of getting out from under an appellation which their predecessors valued highly but which has become burdensome over the years in the face of experience. Typical of this last group is the biennial proposal to license "naturopaths," a so-called profession which, from its roster of sponsors, would appear to be an offshoot of chiropractic.

Examples of what the public would face if "naturopathy" came into legal existence in California have been furnished by other states which have succumbed to the blandishments of the promoters of this "science" and have licensed them to practice, only to regret that decision within a few years and rescind the privileges already granted. A current report from Florida, one of the strongholds of this group, quotes the state narcotics inspector as stating that "if there are, or ever were, any schools offering courses in naturopathy other than diploma mills . . . it is a well-guarded secret . . ."

Another group seeking establishment of its own board for licensure or certification is the psychologists' organization, composed of Ph.D.s who wish to gain official recognition of their training and background through legal means. While their motives appear to be lofty and their training of the best, it has been shown in other states that certification as a psychologist inevitably leads to the interpretation of certification as licensure. And such a license treads on, if not over, the border of psychiatry. Medicine has never objected to official recognition of these trained people but it does believe that their practices should be considered as ancillary to the medical practice of psychiatry or other specialties and that, therefore, the psychologists should come under the examination and certification procedures of the Board of Medical Examiners.

In the field of pharmacy, more than 100 bills have been introduced. Many of these are simply technical amendments to permit more efficient administration of the law. Others are more directly aimed at physicians by adding mandatory requirements for the handling of dangerous or hypnotic drugs, a question on which medicine and pharmacy have disagreed in the past. It is interesting to note that dentistry has also been singled out as a group over which pharmacy officials would like a tighter rein, despite technical and economic factors which make some of the proposed bills appear almost ludicrous. Likewise, it is interesting that of more than 100 bills in the hopper, only eight have been introduced in behalf of the organized pharmacy profession and only 16 for the State Board of Pharmacy. The others have come from a variety of sources, some of them a little obscure.

One measure which has already caused a rash of opposition from certain sources is the so-called cancer quack control bill. The California Medical Association has embraced this bill as a co-sponsor and has watched with interest the adherents of Hoxsey and others attempt to kill the bill before it is even heard in committee.

This bill would provide a board, functioning in the State Department of Public Health, which would have authority to demand samples of drugs or devices claimed to be of value in cancer therapy and have such items scientifically tested in impartial laboratories. If such investigation proved the items worthless in treating cancer, the board would have authority to call the attention of state licensing authorities to the continued use of the products by licentiates of the respective boards. Only the licensing bodies would have punitive powers. This measure

promises to stir up a cloud of controversy, with science arrayed on one side and the proponents of testimonial cancer cures on the other.

As the Legislature gets under way in the next few weeks, additional reports will be forthcoming on the status of many individual proposals now under consideration. Meanwhile, there is every indication that medicine again faces a host of unwanted legislation and must continue to keep its guard up. Fortunately, the legislative forces of the C.M.A. are established on firm ground. Their vigilance and their performance may be counted upon without question.

Letters to the Editor . . .

To the Editor:

AFTER READING Dr. Ian Macdonald's reply to my protest against a section of the Cancer Commission's manual dealing with the question of a trial of androgen in refractory prostatic carcinoma [CALIFORNIA MEDICINE, March, 1957, page 189], I still cannot agree. Will you not, therefore, let me present factual data in support of my dissent:

Huggins, Stevens, and Hodges, in 1941[1] demonstrated that castration or estrogen therapy produced important palliation in prostatic carcinoma. They also studied the effects of androgen and found that it aggravated the tumor. Widespread investigation since that time has corroborated their findings. I have personally observed several patients subjected to androgen, to which most of them responded with increased pain from their metastases and sometimes with an aggravation of urinary symptoms or the appearance of a hemorrhagic diathesis. In one case, the drug appeared to have no effect whatsoever. In those patients made worse by androgen, the difficulties of palliation appeared increased despite withdrawal of the drug.

Tagnon and co-workers,[2] in a study of the bleeding tendency sometimes seen in advanced prostatic carcinoma, controlled bleeding due to prostatic fibrinolysis by giving estrogen. In one case, bleeding could be produced regularly by administering androgen. In four other cases, the experimental use of androgen had to be stopped because of aggravation of other symptoms. Whitmore, et al,[3] studied the effects of testosterone administration to more than twenty patients with advanced prostatic carcinoma. In two-thirds of these patients they observed neither subjective nor objective changes of any sort, but in the others, there was an unfavorable response. Scott[4] gave testosterone to three patients with advanced prostatic carcinoma in a carefully controlled study. Two patients appeared to be improved. Scott did not recommend that androgen be given in this disease but stated that further research would be of interest.

Because of Scott's report, and because a member of the Cancer Commission wrote me that he believed new information would show androgen to be valuable, I remained in doubt. In order to obtain an up to date and impartial opinion I wrote the A.M.A. and promptly received an answer from their urologic consultant which was later published in the *Journal of the American Medical Association*.[5] He stated. "There is no evidence to show that a cautious or any other type of trial of androgenic hormone is justifiable in patients with carcinoma of the prostate resistant to estrogen. A number of years ago, an occasional patient was found to respond temporarily in general health to large doses of androgen when suffering from carcinoma of the prostate with multiple metastases. The brevity of this improvement was emphasized by rapid dissemination of the disease and subsequent death."

The danger of aggravating the disease in late stages by androgen appears to outweigh any hope of control or palliation. Although cortisone[6] may be helpful to patients refractory to castration and estrogens, testosterone should be withheld and symptomatic treatment should be given as needed.

Sincerely yours,

FREDERICK S. HOWARD, M.D.

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Congenital Absence of the Gallbladder

In California Medicine for December 1956, Monroe and Ragen report a case of congenital absence of the gallbladder and review of the literature.

Kaufman, in his three-volume work on pathology, translated by Stanley Reiman of Philadelphia and published about 1929, states that congenital absence of the gallbladder is rare and that he had personally seen two cases.

I have seen two such cases, both in women. One case I saw at operation for a supposedly nonfunctioning gallbladder, the other at autopsy. That is an incidence of one case in more than 16,000 autopsies performed by me. I have forgotten where, but many years ago I read that the incidence is about 1:14,000.

To my personal knowledge, the late Dr. A. F. Wagner, chief autopsy surgeon to the Coroner, Los Angeles County, performed about 13,000 autopsies during the years 1929 to 1937 and found no case of congenital absence of the gallbladder during that period.

One cannot deny what the literature cited by Monroe and Ragen says, but I cannot believe that it presents the true picture. The over-all incidence cited is 1:1,070. The range is from 1:5,000 to 1:270. Many busy pathologists have never seen a case. I can think of few things which are so uniformly ignored in textbooks on anatomy and pathology as congenital absence of the gallbladder. When mentioned at all it is merely mentioned in passing.

It is high time that anatomists and pathologists report such cases and give incidence. In this connection the fact that one person does 1,000 autopsies and finds two such cases means nothing. He may perform twenty thousand more without seeing another. Large series by very busy services over a period of years should give some reliable figures.

How many surgeons have ever seen such a case? If such cases are as frequent as the figures cited by Monroe and Ragen would indicate, hospital records should be full of them.

John H. Schaefer, M.D.

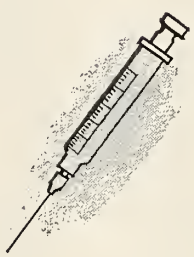
Los Angeles

Dr. Schaefer's letter was referred to the senior author of the case report in question, who replied:

In reviewing the literature, it occurred to us that the apparent incidence of congenital absence of the gallbladder seemed quite high, on the basis of reported cases. However, we could report only what we found since there seemed to be no statistical data to support our impression. I fully agree with Dr. Schaefer that to arrive at the incidence of a rare anomaly, it is necessary to have an extremely large statistical sample, and the rarer the lesion the greater the need for a large sample.

In conclusion, then, we agree with Dr. Schaefer that the real incidence of congenital absence of the gallbladder is probably considerably less than 1:1,070 but would like to emphasize that we were merely reporting the literature as we found it. The senior author plans to carry out a more embracing statistical study of this anomaly.

Stanley Edwin Monroe, M.D.



CALIFORNIA MEDICAL ASSOCIATION

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1957 ANNUAL SESSION

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House of Delegates

will meet

SUNDAY, APRIL 28, and WEDNESDAY, MAY 1, 1957

In The Ambassador Hotel

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- Non-member physicians will be registered upon proper identification.
- Nurses, technicians, medical students and office assistants will be registered upon identification from employing physicians, medical schools, etc.
- Pharmacist mates and other military personnel of like grade will be admitted upon presentation of a letter requesting their admittance, written by their commanding officer.
- Dentists (D.D.S.), doctors of veterinary medicine (D.V.M.), dietitians and allied public health personnel will be registered upon proper identification.

4 DAYS OF SCIENTIFIC MEETINGS • TECHNICAL EXHIBITS

SCIENTIFIC EXHIBITS • MEDICAL MOTION PICTURES

In Memoriam

ANDERTON, HERBERT SETH. Died in San Diego, February 15, 1957, aged 68. Graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1910. Licensed in California in 1912. Doctor Anderton was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

BESSER, RUDOLPH W. Died in Burbank, February 10, 1957, aged 49, of aneurysm of the aorta. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1937. Licensed in California in 1938. Doctor Besser was a member of the Los Angeles County Medical Association.

✣

BONTHIUS, ANDREW. Died February 24, 1957, aged 76. Graduate of Northwestern University Medical School, Chicago, 1909. Licensed in California in 1914. Doctor Bonthius was a member of the Los Angeles County Medical Association.

✣

COLE, GEORGE MAYNARD. Died in Brawley, February 22, 1957, aged 54, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1943. Licensed in California in 1943. Doctor Cole was a member of the Imperial County Medical Society.

✣

HAMILTON, ROBERT L. Died recently, aged 52. Graduate of the University of Tennessee College of Medicine, Memphis, 1929. Licensed in California in 1929. Doctor Hamilton was a member of the Yuba-Sutter-Colusa County Medical Society.

✣

HARTSOUGH, CHRISTOPHER WILLIAM. Died in Durham, North Carolina, October 23, 1956, aged 48, of aortic stenosis. Graduate of McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1935. Licensed in California in 1935. Doctor Hartsough was an associate member of the San Diego County Medical Society.

✣

HAWKINS, JOSEPH OREY. Died in San Rafael, February 22, 1957, aged 51. Graduate of Tulane University School of Medicine, New Orleans, Louisiana, 1929. Licensed in California in 1929. Doctor Hawkins was a member of the Marin County Medical Society.

HEARD, WESLEY ROBERT. Died in Monterey, March 1, 1957, aged 58. Graduate of the University of Western Ontario Faculty of Medicine, London, Ontario, Canada, 1924. Licensed in California in 1925. Doctor Heard was a member of the Monterey County Medical Society.

✣

MCINTURFF, DAVID NATHANIEL. Died in Sunnyvale, February 14, 1957, aged 54. Graduate of the University of Oregon Medical School, Portland, 1930. Licensed in California in 1937. Doctor McInturff was a member of the Santa Clara County Medical Society.

✣

MASON, CLIFFORD VERNE. Died in Santa Cruz, September 27, 1956, aged 63, of myocardial infarction. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1926. Licensed in California in 1926. Doctor Mason was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

RANKER, EMERY R. Died in Oakland, February 4, 1957, aged 60, of coronary thrombosis. Graduate of Northwestern University Medical School, Chicago, 1933. Licensed in California in 1933. Doctor Ranker was a member of the Alameda-Contra Costa Medical Association.

✣

SCHMITT, LIONEL SAMUEL. Died in San Francisco February 5, 1957, aged 80. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1901. Licensed in California in 1901. Doctor Schmitt was a member of the San Francisco Medical Society.

✣

SUTHERLIN, CECIL GLENN. Died in San Diego, February 22, 1957, aged 69. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1913. Licensed in California in 1922. Doctor Sutherlin was a retired member of the Los Angeles County Medical Association and the California Medical Association and an associate member of the American Medical Association.

✣

WOOLFORD, JOSEPH SIDNEY. Died January 30, 1957, aged 59. Graduate of the University of Louisville School of Medicine, Louisville, Kentucky, 1927. Licensed in California in 1928. Doctor Woolford was a member of the Humboldt County Medical Society.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Dear Doctor:

Another year is coming to a close for your Woman's Auxiliary and this will be my last visit with you. I hope you have followed us through these pages and have come to know us for our various activities in behalf of the medical profession.

We are proud of our achievements in the field of nurse recruitment and have many newly sponsored future nurses' clubs among the young girls in the junior high schools. This is one phase of our work to which we are very dedicated because it means so much, both to you and to the communities in which we live.

The funds are coming in very well for the American Medical Education Foundation and we are sure that we will receive notice of our generosity at the national convention.

We have made rapid strides in the extension of interest in *Today's Health* this year. Los Angeles County received a prize for having secured the most subscriptions in Class 4 at Christmas time. We are distinctly proud of this fact.

We are actively engaged at present in carrying forth a campaign of contacting our state legislators in regard to the cancer bill, in which you doctors are so vitally interested.

So in each field pertinent to medicine your auxiliary has been active and has had the pride of achievement.

I recently have returned from my official visit to many of our northern counties and find a great alertness and interest in every one of the counties. This leads me to believe that there exists a relationship between the county medical societies and the auxiliaries which is very gratifying because of the enthusiasm. Perhaps our little visits each month have reached you after all, and perhaps you have come to feel that you have a right hand in the auxiliary upon which you can always count to deal an effective blow in your behalf.

A new president will very soon be in charge of your auxiliary and I hope you will extend to her all of the courtesy, understanding and cooperation which, through your county medical societies, you have extended to me this year.

It has been a distinct pleasure to serve you as president of the Woman's Auxiliary to the California Medical Association and I am proud indeed of each of our component county auxiliaries and the pride they are taking in this, their dedicated field of service.

Cordially yours,

MRS. PAUL C. BLAISDELL, *President*
Woman's Auxiliary to the
California Medical Association

Twenty-seventh Annual Convention

WOMAN'S AUXILIARY
TO THE
CALIFORNIA MEDICAL ASSOCIATION
Los Angeles, April 28 to 30
HEADQUARTERS . . . . . AMBASSADOR HOTEL

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Sydney S. Gellis, professor of pediatrics and chairman of the department of pediatrics at Boston University School of Medicine, will lecture during the sixth annual **Clifford Sweet Lectureship** at Children's Hospital of the East Bay, Oakland, scheduled for June 7 and 8. His principal lecture, entitled "Iatrogenic Diseases," will be given at 6 p.m. in connection with the annual opening night banquet.

Further information may be obtained from Children's Hospital of the East Bay, 5105 Dover Street, Oakland 9, OLympic 2-1143.

LOS ANGELES

The Los Angeles County Heart Association is receiving applications for **research grants in the field of cardiovascular diseases** for 1957-1958. Any investigator is eligible to make application for a grant. Applications must be received by the Heart Association by May 1.

Grants will be given priority as follows: First, research into the causes and means of prevention of heart disease; second, studies of methods of diagnosis of individual cases of heart disease.

Detailed information may be obtained by writing to the Los Angeles County Heart Association, 660 South Western Avenue, Los Angeles 5, or by calling DUnkirk 5-4231. Grants will be announced by June 1, 1957.

* * *

The **Los Angeles County Women's Medical Society** has invited women physicians and their guests to attend a joint meeting of that organization and the Los Angeles County Women Lawyers to be held at the Chapman Park Hotel, 615 South Alexandria, Los Angeles, in the Gold Room on May 1 at 7:00 p.m.

Dinner will be served. The price of dinner will be approximately $4.75, the announcement said.

* * *

The **California Medical Association golf tournament** will be held this year at the Montebello Country Club on Monday, April 29, 1957. Golfers may tee off between 10 a.m. and 1 p.m. Foursomes will be made up at the first tee by the starter. The usual four flights will be segregated according to handicaps. Those with handicaps above 25 will compete with the "compleat duffers." The course is reported to be in excellent condition.

A social hour and dinner to award prizes to the winners will take place in the dining room of the club beginning at 6 p.m. Dinner should be completed by 8:30 p.m. Any wives who wish may be served dinner at the club that evening.

For out-of-towners: The Montebello Club is easily reached from any downtown hotel by Hollywood Freeway east to Ramona Freeway, thence east to Garfield Avenue turnoff south. Garfield Avenue extends to the Montebello Country Club.

SAN FRANCISCO

The fourth annual **medical symposia** given by the medical service of Fort Miley Hospital, San Francisco, in cooperation with Stanford University and University of California medical schools, has been announced by the **San Francisco Academy of General Practice.** Six in all, the symposia will be held each Tuesday evening, April 16 to May 21, from 8 to 10 o'clock in the Fort Miley Hospital auditorium. The program:

April 16: A Symposium on Endocrinology—Peter Forsham, M.D., Felix Kolb, M.D., and Max Rukes, M.D.

April 23: Myocardial Infarction and Coronary Artery Disease—John Sampson, M.D., Robert L. Smith, Jr., M.D., Maurice Sokolow, M.D., and Arthur Selzer, M.D.

April 30: The Diagnosis and Treatment of the Comatose Patient—Clayton D. Mote, M.D., Paul Sanazaro, M.D., Robert H. Alway, M.D., and Frederick A. Fender, M.D.

May 7: Fever of Unknown Origin—Arthur L. Bloomfield, M.D., Henry Brainerd, M.D., and H. Corwin Hinshaw, M.D.

May 14: Symposium on Gastrointestinal Disease—Claude Callaway, M.D., John Carbone, M.D., Hugo Moeller, M.D., and Louis Brizzolara, M.D.

May 21: Symposium on Lymphoma and Cancer—Byron E. Hall, M.D., L. Henry Garland, M.D., and Leonard G. Dobson, M.D.

* * *

Dr. Robert H. Alway has been named acting dean of Stanford School of Medicine, effective at once, to replace Dr. Windsor C. Cutting, who resigned as dean in January but continued in the post until a successor could be found. Dr. Cutting will remain a member of the medical faculty.

Dr. Jay Ward Smith, associate dean, and Dr. Lyman M. Stowe, assistant dean, will continue to serve under the new acting dean.

A committee headed by Wallace Sterling, president of the university, has been appointed to select a permanent dean for the medical school. It includes Drs. Alway and Smith, Claude P. Callaway, William W. Greulich, Henry S. Kaplan, Robert R. Sears, William C. Steere, and Dwight L. Wilbur.

* * *

Two members of the faculties of medical schools in California have been awarded American Cyanamid Co. **grants in support of research.** They are: Dr. Alexander N. Contopoulos, Department of Anatomy, University of California, Berkeley, who received a one-year grant, and Dr. Robert J. Roantree, Department of Microbiology, Stanford University, a three-year grant.

"The basic purpose of the grants," the announcement said, is to help assure to schools and universities adequate funds to encourage medical men of stature to continue in teaching and research posts." The amounts of the grants were not announced.

SANTA BARBARA

The 1957 meeting of the **Western Orthopedic Association** is to be held in Santa Barbara, October 20 to 24. Officers for 1957 are: Samuel S. Mathews, M.D., Los Angeles, president; Richard McGovney, M.D., Santa Barbara, vice-president; and Walter Scott, M.D., Los Angeles, secretary-treasurer.

POSTGRADUATE

EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical ar surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Inhalation Therapy. Wednesday, April 24. Six hours. Fee: $17.50.

Dissection of Extremities. Mondays, April 29 through June 10. Seventeen hours. Fee: $125.00.

Problems of the Newborn. June 13 to 15. Fifteen hours. Fee: $60.00.

Techniques of Hypnosis. Monday, Tuesday and Wednesday morning, June 24, 25 and 26. Fifteen hours. Fee: $60.00.

Advanced Techniques and Application of Hypnosis. Wednesday afternoon, Thursday and Friday, June 26, 27, 28. Fifteen hours. Fee: $100.00.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Medical Ophthalmology and Ophthalmoscopy. Thursday and Friday, May 16 and 17. Fourteen hours. Fee: $60.00.

Arthritis and Rheumatic Diseases. Thursday and Friday, May 16 and 17.*

Ear, Nose, Throat, Clinics and Seminars. Friday and Saturday, May 24 and 25.*

Pediatrics. June 11 to 14.*

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

*Hours and Fees to be announced.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 1919 Wilshire Blvd., Los Angeles 57.

POSTGRADUATE INSTITUTES, 1957

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: The chairman listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

Medical Dates Bulletin

APRIL MEETINGS

SAN FRANCISCO HEART ASSOCIATION Nurses Institute on the Care of the Cardiac Patient, April 17 and 18, 8:30 a.m. to 5 p.m., San Francisco. *Contact:* Mr. Lawrence Kramer, Executive Director, San Francisco Heart Association, 604 Mission Street, San Francisco, or telephone: YUkon 2-5753.

CANCER COMMISSION, CALIFORNIA MEDICAL ASSOCIATION, Cancer Conference for San Luis Obispo County Medical Society, April 20.§

§*Contact:* Walter E. Batchelder, M.D., Medical Director, Cancer Commission, Suite 816, 450 Sutter St., San Francisco.

‡*Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

LETTERMAN ARMY HOSPITAL "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

ST. MARY'S HOSPITAL, San Francisco, Annual Staff Day. Hospital Auditorium, April 24, 9 a.m. to 4 p.m. Guest speakers: Alexander Brunschwig, M.D., New York; James W. Colbert, M.D., St. Louis; Edward G. Biglieri, M.D., Maryland. Memorial Dinner at St. Francis Hotel, 6 p.m. Fee: $20.00, includes lunch and dinner. *Contact:* Frank A. Solomon, Jr., M.D., St. Mary's Hospital.

CANCER COMMISSION, CALIFORNIA MEDICAL ASSOCIATION, Cancer Conference for Merced County Medical Society, April 25.§

CALIFORNIA CHAPTER, AMERICAN COLLEGE OF CHEST PHYSICIANS Annual Meeting, Ambassador Hotel, Los Angeles, Saturday, April 27. *Contact:* Marvin Harris, M.D., president, 6317 Wilshire Blvd., Los Angeles.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

MAY MEETINGS

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS. Auditorium, State Building, 217 West First Street, Los Angeles, May 2 and 3. *Contact:* Donald G. Davy, M.D., State Dept. of Public Health, 2151 Berkeley Way, Berkeley.

CANCER COMMISSION, CALIFORNIA MEDICAL ASSOCIATION, Cancer Conference for Napa County Medical Society, May 8.§

NEVADA CHAPTER, AMERICAN ACADEMY OF GENERAL PRACTICE Annual State Meeting, Riverside Hotel, Reno, Nevada, May 10 to 11. *Contact:* Robert F. Biglin, M.D., chairman, 1338 S. Virginia St., Reno.

CALIFORNIA HEART ASSOCIATION Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

JUNE MEETINGS

CHILDREN'S HOSPITAL OF THE EAST BAY Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

STATE BOARD OF MEDICAL EXAMINERS Oral Examination, San Francisco, June 15.*

IDAHO STATE MEDICAL ASSOCIATION 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

STATE BOARD OF MEDICAL EXAMINERS Written Examination, San Francisco, June 17 to 20.

WYOMING STATE MEDICAL SOCIETY ROCKY MOUNTAIN MEDICAL CONFERENCE Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

SUMMER AND FALL MEETINGS, 1957

COLORADO DIVISION, CANCER SOCIETY ROCKY MOUNTAIN Cancer Conference, 9 a.m., July 10 and 11, Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., Chairman, 835 Republic Bldg., Denver 2.

STATE BOARD OF MEDICAL EXAMINERS Oral Examination, Los Angeles, August 17.*

STATE BOARD OF MEDICAL EXAMINERS Written Examination, Los Angeles, August 19 to 22.

UTAH STATE MEDICAL ASSOCIATION Annual Scientific Session, September 5 to 7, Hotel Utah, Salt Lake City, Utah. *Contact:* Harold Bowman, 42 South Fifth Street, Salt Lake City.

SAINT JOHN'S HOSPITAL Annual Postgraduate Assembly, September 12 to 14, Saint John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, Postgraduate Assembly, 22nd Street at Santa Monica Blvd., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN DIEGO COUNTY GENERAL HOSPITAL 11th Annual Postgraduate Assembly, September 18 to 19. Reception for all registrants, 5:00 to 7:00 p.m., September 18. *Contact:* Haddon A. Peck, Jr., M.D., 525 Hawthorne St., San Diego.

NEVADA STATE MEDICAL ASSOCIATION Annual Meeting, Las Vegas, September 25 to 28. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

SAN FRANCISCO HEART ASSOCIATION 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

FIRST WESTERN INDUSTRIAL HEALTH CONFERENCE, Biltmore Hotel, Los Angeles. October 4 to 6. *Contact:* E. J. Zaik, M.D., secretary, Western Industrial Medical Association, 740 South Olive Street, Los Angeles 14.

SAN DIEGO COUNTY HEART ASSOCIATION Seventh Annual Professional Symposium on Heart Disease. U. S. Naval Hospital, San Diego, October 8. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth Ave., San Diego.

LOS ANGELES COUNTY HEART ASSOCIATION 27th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 W. Eighth St., Los Angeles, October 9-10. *Contact:* Walter S. Thompson, Jr., M.D., chairman, 660 S. Western Ave., Los Angeles.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

CALIFORNIA ACADEMY OF GENERAL PRACTICE Ninth Annual Scientific Assembly, November 3 to 6, Hotel Statler, Los Angeles. *Contact:* William W. Rogers, executive secretary, 461 Market Street, San Francisco.

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*NOTE: In regard to the dates of oral examinations, applicants are requested *NOT* to arrange to come to an oral examination until they receive a notice of the action of the Credentials Committee advising them of the time and place to appear.

INFORMATION

A Way to Gauge Hospital Needs

One of the major demands upon the pocketbooks of the American people is the cost of illness and maintaining health, involving expenditures amounting to about twenty billion dollars a year. Of this amount, five and a half billion was spent in 1955 to cover the operating expenses of hospitals in the United States.

It is not generally realized, even in the face of such expenditure, that the operation and maintenance of the nation's hospitals constitute one of the largest of U. S. industries. In 1955, for example, the country's hospitals employed one and a third million full-time employees, and represented a twelve billion dollar investment in facilities and equipment.

In view of our rising national economy and population, demands upon hospital capacity are increasing along with the cost of providing for present and future needs. Consequently, various lay and professional groups and organizations responsible for the direction, management, and financing of the country's hospitals are becoming more and more interested in achieving greater efficiency in hospital administration and operation, maximum utilization of hospital facilities and services, and sound long-range planning. As in the case of other complex, large-scale, U. S. industries, however, such objectives require application of a scientific research approach to the various aspects and operations involved in the provision of hospital services today and tomorrow.

Until recently, the necessary information was available only through consultant opinions, from academic studies, from expert committees concerned with special phases or problems, or from special commissions created for specific tasks. The 15 schools of hospital administration in the United States concentrate on training personnel for the important job of directing such institutions. The Johns Hopkins Hospital recently established an operations research group to survey its own needs. Yale University, the Massachusetts Institute of Technology, and a few other institutions are conducting research regarding hospital operation.

At present, few organizations are interested in, and adequately staffed and available for the conduct on a broad and varied scale of the urgently needed studies and investigations of the specialized problems of hospitals and other organizations in the health field.

To help meet this need, the Stanford Research Institute's Health Economics Unit—probably the first group specifically concerned with applying the scientific research approach to the interrelated aspects of health administration—is conducting studies on several aspects of the health field. These include a variety of problems such as the determination of future facility needs, the development of sound financial practices, the utilization of modern techniques such as data-processing and automation, and the most productive allocation of resources.

THE OAHU HOSPITAL STUDY

A recently completed study of the hospital facility needs of the Hawaiian island of Oahu, prepared for the Public Health Committee, Honolulu Chamber of Commerce, illustrates the multifaceted character of hospital administration problems. It required the joint effort of economists, area planners, physicians, and operations research analysts to gather, analyze, and interpret the data and information necessary to obtain the desired answers.

The study considered the hospital facilities of Oahu as a whole in determining present capacity and future requirements to meet the needs of the entire civilian community. It was based on the major premises that the Oahu hospital goal was to provide adequate medical care to the public at minimum social and economic cost; that a patient on Oahu could be admitted to any vacant civilian hospital bed in any Oahu hospital providing the type of service required by his condition; and that the provision of hospital facilities is, in essence, paying an insurance "premium" to minimize the risk of future bed overloads.

DETERMINING HOSPITAL BED NEEDS—A NEW METHOD

A particularly important outcome of this study was the development of a new method for projecting hospital bed needs, stemming from the realization that absolute protection against hospital overload is not possible, regardless of the amount of bed capacity. From this premise, the concept of determining necessary hospital bed capacity in terms of maximum, practicable "insurance" against overload was established. For this study, a "bed" represented the entire hospital complex—staff, operating rooms, pharmacies, kitchens, and other supporting facilities —needed to care for the occupying patient.

The method of determining the "risk"—the likelihood of the bed load exceeding a given number during a future period—is based upon the establish-

Reprinted from the March, 1957, issue of *Research for Industry*, bimonthly news bulletin published by Stanford Research Institute.

ment of probability data similar to life tables and other actuarial data employed in the calculation of insurance rates. The plotting of such data has provided a chart constituting a new "tool" to help any hospital administrator, and others interested, to determine hospital bed needs.

The SRI-developed chart shows the actual cumulative frequency distribution of the Oahu hospitals' pediatric patient case load for 1955 and parallel lines reflecting projections of the case load for 1960 and 1965, appropriately weighted to allow for growth trends in Oahu child population and consequent hospital bed loads. These lines are plotted on logarithmic-probability scales and indicate the probability of the occurrence of a given caseload. Intersection of the parallel lines with the desired overload probability percentage indicates the number of beds required to provide a given degree of insurance against overload.

For initial use, a one-in-a-thousand chance of bed demand exceeding capacity on any given day was considered satisfactory for the Oahu situation. The number of beds needed in 1960 and 1965 to keep the chances of an overload to one in a thousand was then calculated.

Similar charts were prepared for each type of in-patient service provided by Oahu hospitals. Comparison of the projected additional hospital bed need for each type of service indicates considerable difference in requirements and reflects the sensitivity of the method to the basic data employed.

This new method of projecting hospital bed needs has been received with considerable interest by hospital administrators. It is immediately applicable to almost any special or general short-term hospital in-patient service; it develops the desired data by utilizing the experience of the past as a basis for projecting to the future, assuming that hospital trends are normally evolutionary; it readily fits in with today's general methods, procedures, and records; and it avoids the rigidity imposed by applying national or statewide bed need averages to particular locales.

ECONOMIC ASPECTS OF OAHU HOSPITAL OPERATION

Since the provision of additional hospital bed capacity requires increased facilities and resulting increased capital and operating expenditures, the operating expenses and revenue sources of Oahu hospitals were analyzed in order to place the cost of construction in proper perspective compared with total hospital cost. The resulting data, encompassing various phases of hospital operation, indicated that the entire prorated cost of the Oahu hospital plant, including buildings and all facilities, was only 4 per cent of the annual hospital budget. Staff salaries, on the other hand, consumed two-thirds of the total expense.

It was concluded, therefore, that maximum effort should be made to determine areas where the expenditure of capital funds for new equipment and facilities could increase the productivity of personnel and to consider new systems, automation, or medical care plans contributing to more uniform and economic use of facilities and staff. Resulting economies, especially in connection with the labor content of hospital services, could compensate, in the long run, for the capital outlay.

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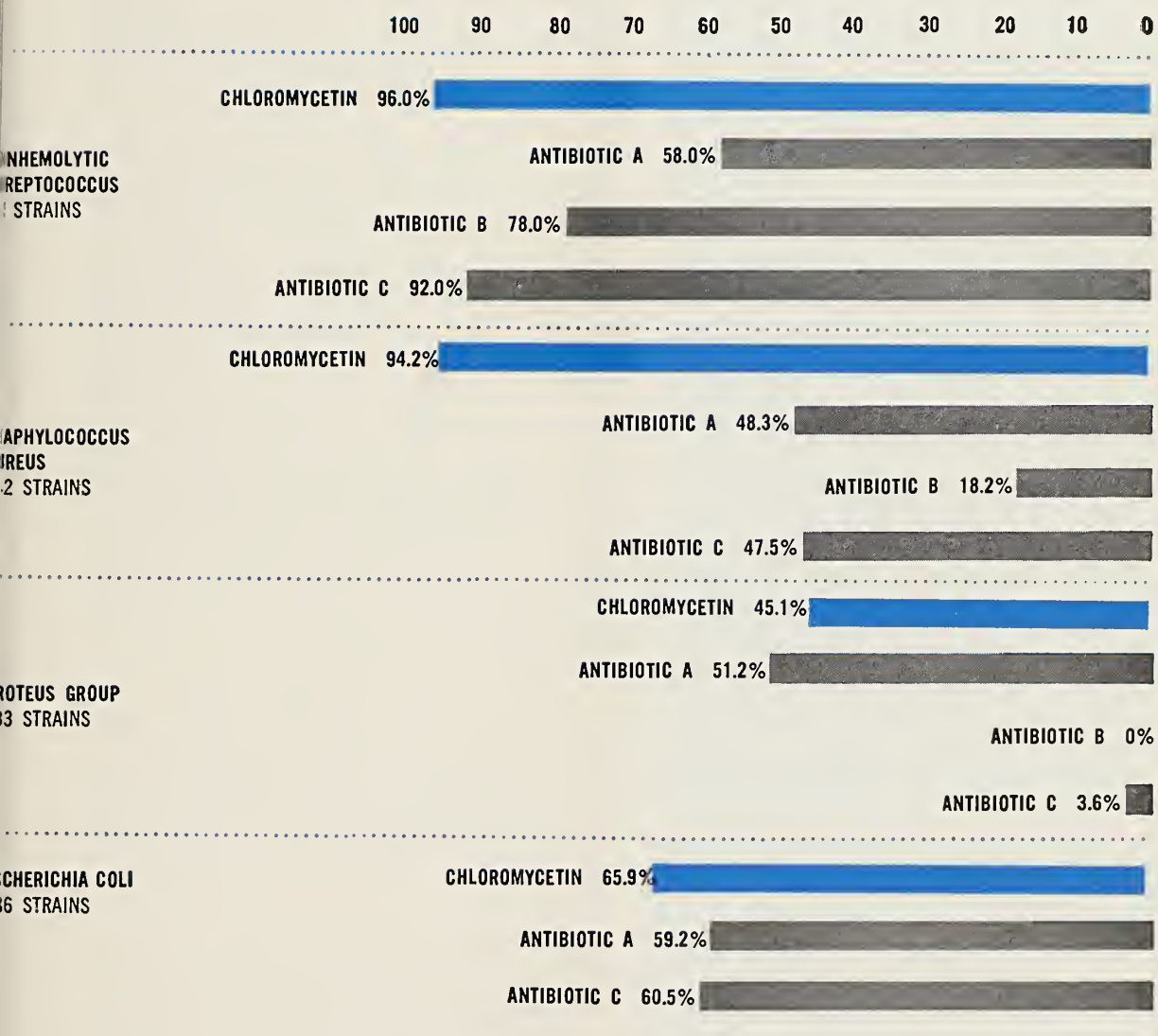

*This graph is adapted from Rantz and Rantz.[1] It is based on *in vitro* studies of bacteria freshly isolated from clinical materials.

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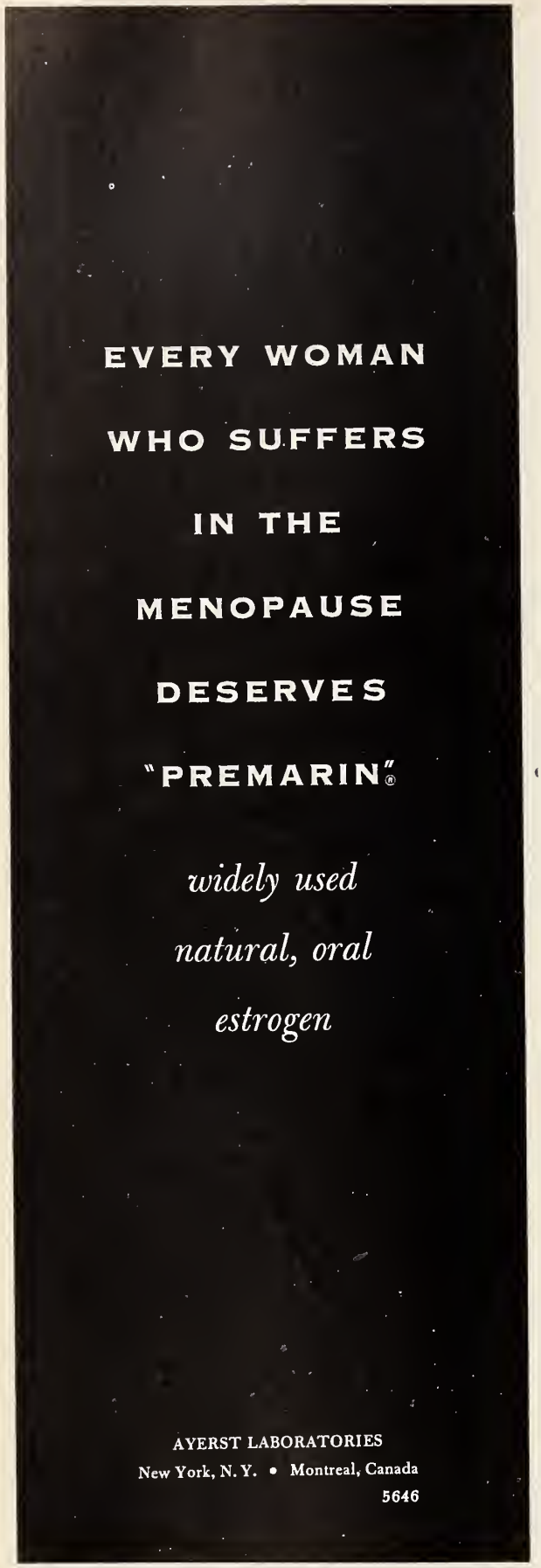

Financial "Helping Hand" Given to Physicians

A "helping hand" movement for doctors needing financial assistance to complete their training or establish their practices is spreading throughout the United States.

A recent survey showed that more than one million dollars is annually available in medical scholarships and loan funds, according to an article in a recent issue of the *Journal of the American Medical Association*.

Many programs are geared to help the doctor at a critical time in his career—when his basic medical education is over and he is at the end of his financial rope.

Leading this movement is the Sears, Roebuck Foundation with its long-term unsecured loans of up to $25,000 for needy doctors in medically needy communities, the article said. The plan benefits new physicians who are unable to meet all the costs of starting a practice and established physicians who are unable to raise enough funds to move their practices to communities lacking doctors.

Two years ago Sears Foundation President Theodore V. Houser proposed the project as a way to solve the problem of doctor distribution. He reasoned that if moves by large companies to rural and suburban areas were meeting a community need, then the same idea could work for medicine.

The foundation annually puts $25,000 into a revolving loan fund, which is administered by an advisory board of leading physicians appointed by the A.M.A. trustees. Loans are given to doctors who have shown that medical practice units are needed in their communities and that they have exhausted all other means of financing their practices.

Some loans are greater than the amount asked, while others are pared down. In fact, the foundation helps more physicians who do not get loans than those who do, the article said. One-fourth of all applicants so far have received loans, while more than half have received sound, helpful and free business management advice—which made loans unnecessary.

The net effect of these foundation efforts in helping doctors to help themselves has been to "seed" medical facilities far beyond the face value of the borrowed money. In its first 18 months, the fund loaned $261,000, which represents the "key cash" responsible for $780,000 in new buildings, $83,000 in remodeling, and $72,000 in new equipment. Physicians obtained the rest of the money from local sources.

As loans are repaid, the revolving fund will grow into millions and new facilities will reach still more communities in need of adequate medical care.

Among the other funds available to the young doctor is that of Mead Johnson and Company, a pharmaceutical firm. It annually allocates $1,000 to

(Continued on Page 72)

NOW AVAILABLE FOR
DAYTIME TRANQUILIZATION
AND SEDATION

Placidyl®
(ETHCHLORVYNOL, ABBOTT)

100-mg. and 200-mg. capsules

Q. *In what ways can I use these new sizes of Placidyl?*

A. With them you can now produce any degree of effect from tranquilization, through sedation, to hypnosis.

Q. *What are the indications?*

A. Placidyl is indicated in cases of nervous or muscular tension, mild anxiety or excitement, and in simple insomnia resulting from these conditions.

Q. *Does Placidyl provide muscle relaxation?*

A. Yes, it possesses mild muscle relaxant properties which provide added advantage in tension states.

Q. *Does Placidyl sedation hinder the patient's work?*

A. No. Investigators have agreed that by selecting a suitable dose, tranquilization can be achieved without any confusion or loss of contact with surroundings.

Q. *What daytime dosage is recommended?*

A. Adult dose ranges from 100 mg., b.i.d., to 200 mg., t.i.d., depending on patient's condition and response.

Q. *Are the new dosage sizes useful for insomnia, too?*

A. Yes. 500 mg. remains the average hypnotic dose; but if your patient also is taking Placidyl by day, 100 or 200 mg. at bedtime is usually enough to stop insomnia.

Q. *Is Placidyl sold under other trade names?*

A. No. It is a mild, halogenated carbinol, structurally unique, made only by Abbott. Supplied in 100-mg., 200-mg., and 500-mg. capsules, bottles of 100. Abbott

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California MEDICINE

CLASSIFIED ADVERTISEMENTS

Rates for these insertions are $5 for fifty words or less; additional words 6 cents each

Copy for classified advertisements should be received not later than the *tenth of the month preceding issue.* • Classified advertisers using Box Numbers forbid the disclosure of their identity. Your inquiries in writing will be forwarded to Box Number advertisers.

CLASSIFIED ADVERTISEMENTS ARE PAYABLE IN ADVANCE

MEDICAL DIRECTOR WANTED

COUNTY HEALTH OFFICER (salary open). Placer County, California, is desirous of obtaining a qualified health officer to assume the directorship of an established and efficient health department. Placer County is located in the foothills of the Sierra-Nevada Mountains and extends from the Sacramento Valley up to and including a large part of Lake Tahoe. The county seat and the health department are located in Auburn, a city of approximately 5,000 persons. The county itself has an estimated population of over 50,000 at the present time. Applicants must be licensed in California. Contact the Placer County Executive Officer, John M. Bernard, Placer County Courthouse, Auburn, California.

PHYSICIANS WANTED

OTOLARYNGOLOGIST association with outstanding ENT man, San Francisco Bay Area; INDUSTRIAL Overseas Medical Director, doing General Practice, starting salary $1,300 plus; OBSTETRICIAN-GYNECOLOGIST association with well established group central California; ORTHOPEDISTS, several for group associations; Assistant Medical DIRECTOR for Honolulu; OPHTHALMOLOGISTS, several excellent openings throughout California; GENERAL PRACTITIONERS, an unusual number of associations available for General Practitioners locations in San Francisco and throughout northern California starting at $1,000 up; PATHOLOGIST ASSOCIATE, $12,000. For further information please contact Norma Rohl, THE MEDICAL CENTER AGENCY, 26 O'Farrell Street, San Francisco, YUkon 2-3412.

YOUNG ASSOCIATE WANTED around July 1, 1957 for interesting growing general practice. New, well equipped, office in beautiful western Marin County, California. Excellent hunting and fishing. Salary open with opportunity for partnership. Three hospitals with open staffs 20 miles; San Francisco, 40 miles. Contact Gordon J. Plattes, M.D., Box 95, Point Reyes Station, California.

G. P. OR SPECIALIST, preferable age of 30 to 37, in rapidly growing city in San Bernardino area. Individual office suite and practice, full Laboratory and X-ray facilities, excellent Hospital facilities. To share overhead with three other doctors. Can expect gross income well above average. Available for immediate occupancy. Box 93,300, California Medicine.

INTERNIST, 32, married, Board Qualified with special interest pulmonary diseases, wishes permanent association with established Internist or group in California, location other than metropolitan Los Angeles. California license, military obligation completed. Reliable, congenial, willing to work hard. Personal interview requested. Available July 1, 1957. Box 93,310, California Medicine.

CALIFORNIA LICENSED PHYSICIAN SURGEONS WANTED: Contact us for registration forms and information on our many excellent opportunities in California. Outstanding openings in GENERAL PRACTICE, INDUSTRIAL AND THE SPECIALTIES . . . associations, assistantships, groups, locations for private practice in NORTHERN, CENTRAL AND SOUTHERN CALIFORNIA. PACIFIC COAST MEDICAL BUREAU agy., 703 Market Street, SAN FRANCISCO, or 510 West Sixth Street, LOS ANGELES.

(Continued on Page 76)

Financial "Helping Hand" Given to Physicians

(Continued from Page 68)

each of five medical academies for graduate training of five new physicians.

Scholarships and loans are also offered in a wide variety of programs supported or administered by 20 state medical associations. Alabama led this "doctor-help-doctor" movement in 1943. West Virginia and Indiana recently started programs. These funds are supported by state medical association dues, individual loans and contributions from doctors, and state tax money. The Student American Medical Association, hospitals and various other organizations also have assistance programs.

C.M.A. Annual Session

Motion Picture Program. Arthur E. Smith, D.D.S., M.D., Los Angeles, Chairman, Colonial Room, Ambassador Hotel.

A carefully selected program of approximately 100 medical motion pictures will be shown Sunday afternoon and evening, Monday morning and evening; Tuesday morning and evening; and Wednesday morning.

ALEXANDER SANITARIUM
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LOCATED IN THE FOOTHILLS OF BELMONT, CALIFORNIA

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MRS. ANNETTE ALEXANDER, President
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The Alexander Sanitarium is a neuropsychiatric open hospital for treatment of emotional states. Treatment consists of electric shock, hydrotherapy, insulin shock-therapy, psychotherapy and occupational therapy. Conditioned reflex treatment for alcoholism.

Occupational facilities consist of special occupational therapy room, tennis court, billiards, badminton court, table tennis and completely enclosed, heated, full-size swimming pool.

Six Psychiatrists in Attendance:

JOHN ALDEN, M.D.
Chief of Staff
HENDRIE GARTSHORE, M.D.
Asst. Chief of Staff
P. P. POLIAK, M.D.
Asst. Chief of Staff
GEORGE KOWALSKI, M.D.
Staff Physician
RUSSELL L. GOULD, M.D.
Staff Physician

A patient accepted for treatment may remain under the supervision of his own physician if he so desires.

for Hernia

When you refer a patient to M. J. Benjamin you are assured that a support will be carefully made according to sound principles backed by two generations of experience.

Shaping each pad to conform to the hernial region permits the covering of a broader surface and the use of a softer material.

Our work is guaranteed to meet with your approval and your patient's satisfaction.

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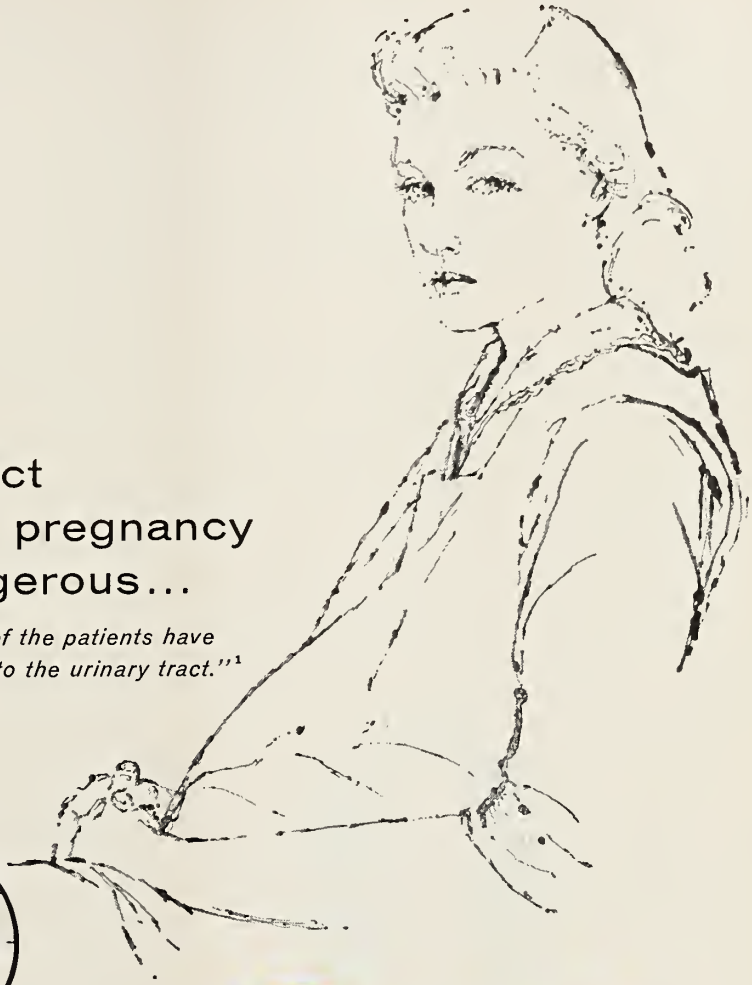
MISERABLE COLD

each coated tablet:

Phenacetin (3 gr.)	194.0 mg.
Acetylsalicylic Acid (2½ gr.)	162.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine Sulfate	0.031 mg.
Prophenpyridamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10.0 mg.

Robins



in urinary tract infections of pregnancy delay is dangerous...

"Approximately one-half of the patients have some permanent damage to the urinary tract."[1]

30 min. antibacterial concentrations in urine
24 hrs. turbid urine frequently clear
3 days most patients symptom-free

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FOR RAPID ERADICATION OF INFECTION

Specific for genitourinary tract infections • rapid bactericidal action against a wide range of gram-positive and gram-negative pathogens and organisms resistant to other agents • negligible development of bacterial resistance • excellent tolerance —nontoxic to kidneys, liver and blood-forming organs • safe for use in pregnancy[2,3]

AVERAGE FURADANTIN DOSAGE: 100 mg. q.i.d. with food or milk. Continue treatment for 3 days after urine becomes sterile.

SUPPLIED: Tablets, 50 and 100 mg. Oral Suspension (25 mg. per 5 cc. tsp.).

REFERENCES: 1. Rives, H. F.: Texas J. M. **52**:224, 1956. 2. Diggs, E. S.; Prevost, E. C., and Valderas, J. G.: Am. J. Obst. **71**:399, 1956. 3. MacLead, P. F., et al.: Internat. Rec. Med. **169**:561, 1956.

NITROFURANS

a new class of antimicrobials—neither antibiotics nor sulfonamides

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Congress of Industrial Health

Problems associated with vision, burns, pesticides, and noise highlighted sessions of the 17th annual Congress on Industrial Health held in Los Angeles recently under the sponsorship of the American Medical Association Council on Industrial Health.

The congress, marking the 20th anniversary of the council, was well attended.

American Medical Association President Dwight H. Murray and Assistant Secretary Ernest B. Howard spoke at the annual banquet which was presided over by Dr. William P. Shepard, New York, chairman of the council.

Dr. Rufus Baker Crain, Rochester, N. Y., industrial physician and lecturer, was given an award by the President's Committee on Employment of the Physically Handicapped at the banquet. Dr. Crain, who is 68, was selected for the award because of his valuable advice and assistance in the fields of physical demands analysis and rehabilitation of handicapped persons, especially those with heart disease.

In addressing the banquet, Dr. Murray said that the places where people work are now safer than their homes and the highways. He traced the "amazing progress" that has been made in safeguarding the workers' health and cited statistics showing how the accidental death rates in industry have declined in the last 15 years.

"Today," he said, "industry is demanding more medical service, guidance, and advice than ever before. Twenty-five years ago there perhaps were only several hundred physicians doing industrial medical work. Now there are 25,000 such physicians —5,000 full time, 10,000 part time, and another 10,000 on call."

The council itself transacted much business at meetings held before the congress opened. Secretary B. Dixon Holland said the council had approved a statement outlining new objectives and functions of occupational health programs. The statement, which will now go to the Board of Trustees, pinpoints occupational health as good preventive medicine in industry. The statement, which Dr. Holland said will help achieve a better understanding between industrial physicians and those in private practice, was the outgrowth of a recommendation made by the Commission on Medical Care Plans last year.

Doctors Praised for Air Disaster Work. Los Angeles doctors attending the meeting discussed informally and among themselves the outstanding job which was done by hospitals, physicians, and nurses in handling the students who were injured in the California aircraft disaster. The pupils were caught in the shower of flying aircraft wreckage of the disastrous air collision in nearby San Fernando Valley.

Dr. Rutherford T. Johnstone, Los Angeles, who has been a member of the American Medical Association on Industrial Health since 1947, was loud in his praise of the doctors, many of them general practitioners. Dr. Johnstone, who has served five years as a member of the American Medical Association House of Delegates from the Section on Preventive Medicine, recounted many of the details of the tragedy which pointed up the fine work of the medical profession.

Three young boys and five airmen lost their lives and 63 boys were injured when the two planes, a DC-7 and a F-89 jet, collided in midair, peppering the Pacoima Junior High School athletic field with metal fragments. The injured were treated in five San Fernando Valley hospitals which serve an area with a population of 750,000 people.

Most of the injured boys were treated at the Sun Valley hospital. Twenty-five ambulances brought 52 injured youths to the hospital within a few minutes.

The story behind the heroic work of the doctors and nurses is heartwarming.

The Sun Valley hospital has since received many letters from civic groups, ministers, teachers, and grateful parents for the fine, outstanding job it did under the most trying conditions.

The Sun Valley administrator is Dr. Frederick Gruneck, 59-year-old general practitioner and surgeon, who moved to Los Angeles from Chicago four years ago.

"I was suffering from asthma, decided to retire, and move to California," he said, adding: "After a short time, I couldn't stand the lazy life of a retired doctor and went back to work."

The day he took over as administrator of Sun Valley hospital, the hospital had five patients. Today, with a new addition, it has a patient load of 60.

Dr. Gruneck, who practiced medicine in Chicago for 28 years—20 of them on the staff of the Municipal Tuberculosis Sanitarium—is a dynamic personality who literally bubbles with enthusiasm.

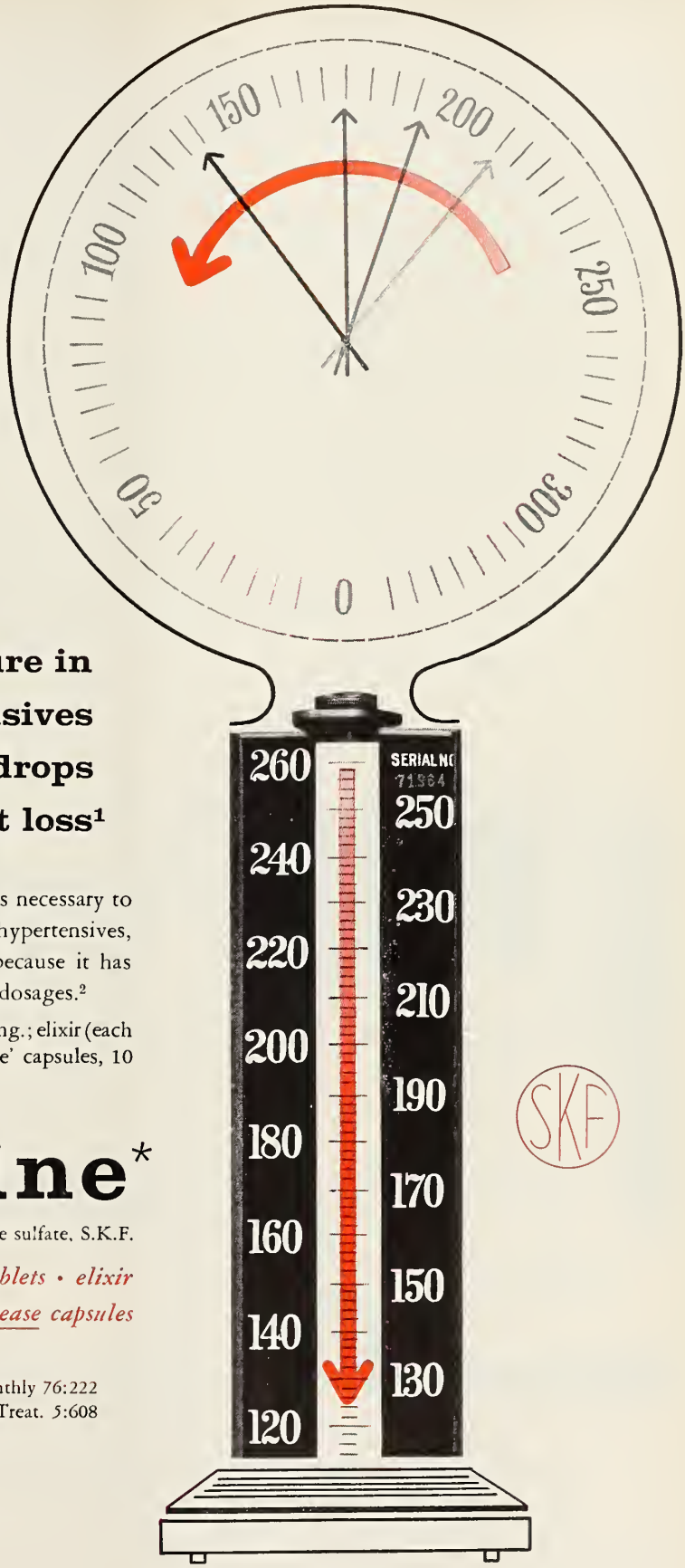
"When the aircraft disaster struck the school, our hospital was ready for the emergency," Dr. Gruneck told John L. Bach, an American Medical Association headquarters staff member, who was in Los Angeles for the industrial health meeting.

"We were prepared because, luckily, we had training in civil defense," the doctor said. "Hospital staff members, including myself, attended several civil defense meetings sponsored by the Los Angeles County Medical Society. What we learned at these meetings we applied in handling our own disaster and, believe me, the know-how helped us immeasurably to meet a gigantic emergency job."

Dr. Gruneck said he first learned of the tragedy when the police called.

"I immediately ordered two big wards cleared," he said. "The patients were moved to other floors. The switchboard operator, following our disaster plan phoned 10 neighborhood physicians and 10 nurses. She had a previous listing of names and

(Continued on Page 88)



Blood pressure in obese hypertensives frequently drops with weight loss[1]

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1. Ferguson, H.E.: Virginia M. Monthly 76:222
2. Roberts, E.: Am. Pract. & Dig. Treat. 5:608

*T.M. Reg. U.S. Pat. Off.

Congress of Industrial Health

(Continued from Page 84)

phone numbers. She also called in two laboratory technicians who we knew would be needed for blood typing. Our calls, fortunately, brought help in a matter of minutes, some of the doctors arriving before the ambulances.

"Later, we put in more calls for anesthetists, orthopedists, and surgeons. We had a 100 per cent response and, of course, that made the hospital work run smoothly."

Dr. Gruneck praised his colleagues, nurses, and hospital staff for their superb job. Then he discussed the details:

"Eight carts were waiting at the emergency entrance when the first ambulance pulled up," he said. "The young patients were immediately classified as serious or nonserious. A physician was assigned to each serious case and remained in constant attendance until the emergency had passed. The serious cases were assigned to one ward and the nonserious to another. Boys in the nonserious group were assigned two to a bed.

"As each young patient passed through the emer-

(Continued on Page 92)

Plan to attend your

C. M. A. ANNUAL SESSION

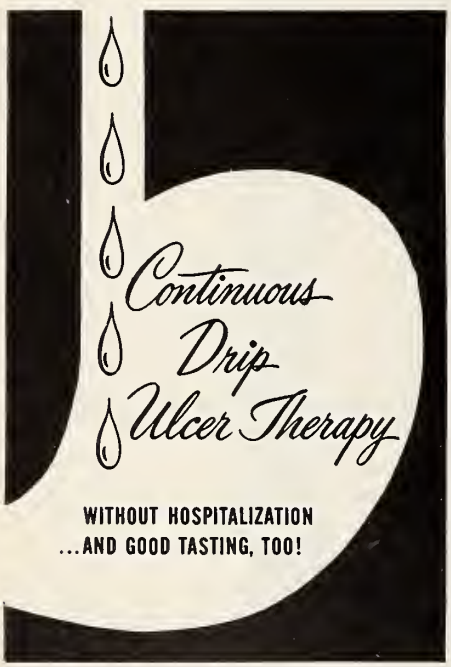
Los Angeles

April 28 - May 1, 1957

Ambassador Hotel

CALIFORNIA CAREER OPPORTUNITIES FOR PHYSICIANS AND PSYCHIATRISTS

Employment available as a result of interview only. Interviews at the APA Conference May 13-17 in Chicago and in such other locations as New York, Boston, St. Louis, Philadelphia, and Minneapolis during May and June. Assignments in State hospitals, juvenile and adult correctional facilities, or a veterans home. Three salary groups: $10,860-12,000; $11,400-12,600; $12,600-13,800. Citizenship, possession of or eligibility for California license required. Write Medical Recruitment Unit, Box D, State Personnel Board, 801 Capitol Avenue, Sacramento 14, California.



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A recent clinical study* of 46 ambulatory nonhospital patients treated with Nulacin† and followed up to 15 months describes the value of ambulatory continuous drip therapy by this method. Total relief of symptoms was afforded to 44 of 46 patients with duodenal ulcer, gastric ulcer and hypertrophic gastritis.

The delicately flavored tablets dissolve slowly in the mouth (not to be chewed or swallowed). They are not noticeable and do not interfere with speech.

Nulacin tablets are supplied in tubes of 25 at all pharmacies. Physicians are invited to send for reprints and clinical sample.

*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. 22:67 (Mar.) 1955.

†Mg trisilicate 3.5 gr.; Ca carbonate 2.0 gr.; Mg oxide 2.0 gr.; Mg carbonate 0.5 gr.

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1. Frohman, I. P.; Pomeranze, J.; Rummel, W.; Kircher, R. F.; Clancy, J. B.; Dwyer, T. A.; Wagner, H.; O'Brien, T. E.; Curley, R. T.; Jörgensen, G.; Onorato, R. R.; Ira, F.; Lee, Jr., J. G.; Gorla, W. O.; White, R. N.; Gadek, R. J.; Remy, D.: Scientific Exhibit, 6th International Congress of Hematology, Boston, Mass., August, 1956.
2. Wagner. H.: Landarzt *31*:496, 1955.
3. Jörgensen, G.: Arztl. Wchnschr. *10*:82, 1955.

†α-aminoacetic-ferrous sulfate complex, exsiccated

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Congress of Industrial Health

(Continued from Page 88)

gency room, his name was printed on a piece of adhesive tape and this was put on his forehead for easy identification. Later, a nurse went through the two wards and registered the patients for hospital records. These records, we knew, would be needed badly to answer the rapid-fire questions of frantic parents when they learned of the disaster and raced to the hospitals. When they did converge on Sun Valley, we were able to tell them if their son was in the hospital and, if so, in what ward.

"All of our civil defense plans were aimed at avoiding or eliminating confusion. This was accomplished with the full cooperation of the Los Angeles police department which, on instructions from the Los Angeles County Medical Society, did not dispatch doctors to the scene. That, we feel, is our job, and it worked well.

"When parents whose sons had been seriously injured reached the hospital they were escorted to private offices where the cases were discussed. Many of the mothers were hysterical. If they had been allowed to roam the halls in search of their children the confusion would have been catastrophic.

"Many of the victims underwent surgery. Two operating rooms were busy from shortly before 11 a.m. until 2 the next morning. In addition, some surgery was done in the emergency room where four tables and auxiliary equipment were set up.

"Looking back now, I feel that civil defense planning and training is all-important in any hospital setup. A hospital never knows when disaster will strike, but, when it does, advance planning pays off in efficiency. We learned that conclusively from our recent experience."

—A.M.A. Secretary's Letter

7,686 Students Enter Medical Schools

Medicine as a profession still has a strong appeal among young people.

A recent report by the American Medical Association shows that 7,686 students, a record number, entered medical schools in the 1955-56 academic year.

Of this number, 5,753, or 75 per cent, had four years of college education.

C.M.A. ANNUAL SESSION

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"...by far the most effective

and useful orally administered agent for reducing blood pressure . . . fully worthy of a trial in every case of essential hypertension in which treatment is thought necessary. The severe cases, which always need treatment, are as likely to respond as the mild."[1]

1. Locket, S.: Brit. M.J. *1*:809 (Apr. 2) 1955.

An Effective Tranquilizer, too

" . . . relief from anxiety resulted in generally increased intellectual and psychomotor efficiency with a few exceptions."[2] Rauwiloid is outstanding for its *nonsoporific* sedative action in a long list of diseases burdened by psychic overlay.

2. Wright, W.T., Jr., et al.: J. Kansas M. Soc. *57*:410 (July) 1956.

Dosage: Merely two 2 mg. tablets at bedtime. After full effect one tablet suffices.

A logical first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

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In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid (alseroxylon) and 3 mg. Veriloid (alkavervir). Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid®+ Hexamethonium

In severe, otherwise intractable hypertension this single-tablet combination provides smoother, less erratic response to hexamethonium. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, ½ tablet q.i.d.

Riker LOS ANGELES

American Medical Association Foods Council Calls Low-Sodium Milk Useful

The Council on Foods and Nutrition of the American Medical Association said recently that low-sodium milk should be "extremely useful" to persons who must restrict their sodium intake.

According to a statement in a recent issue of the *Journal of the American Medical Association*, low-sodium milk is liquid whole milk which has been processed to remove more than 90 per cent of the normal amount of sodium.

Sodium-restricted diets are used to counteract fluid retention by the body in such conditions as congestive heart failure, cirrhosis of the liver, certain kidney diseases, toxemias of pregnancy, and high blood pressure. Some common sources of sodium are table salt, baking powder, and baking soda.

A doctor's ingenuity is often taxed when he must suggest a diet that is tasty, high in protein, and yet low in sodium. If milk is omitted, it becomes difficult to obtain the necessary amounts of protein, calcium, and riboflavin. The necessity of restricting the intake of meat and other protein foods which are high in sodium makes the potential value of milk even more evident, the article said.

The sodium is removed from the milk by a process in which it is replaced by potassium. While the potassium content is about doubled, it is still within the safe range of intake for adults.

In many other nutrients low-sodium milk compares favorably with whole milk, the statement said. However, in planning a diet, allowance must be made

(Continued on Page 106)

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ANNUAL SESSION PROGRAM

**APRIL 28-
MAY 1
1957**

• *Please refer to the March 1957 issue of California Medicine for complete program*

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for the aged

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NICOZOL is supplied in capsule and elixir forms. Each capsule or ½ teaspoonful contains:

Pentylenetetrazol . . 100 mg.
Nicotinic Acid . . . . . 50 mg.

1. Levy, S., *JAMA.*, 153:1260, 1953
2. Thompson, L., Procter R., *North Carolina M. J.*, 15:596, 1954
3. Thompson, L., Procter, R., *Clin. Med.*, 3:325, 1956

From
CONFUSION . . .

to a
NORMAL
BEHAVIOR
PATTERN

WRITE for **FREE NICOZOL**

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Sole distributors in California:
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American Medical Association Foods Council Calls Low-Sodium Milk Useful

(Continued from Page 96)

for the fact that the amounts of thiamine, niacin, and vitamin B_{12} are about halved, while calcium and vitamin B_6 are reduced by about one-fourth.

To help physicians plan diets which include low-sodium milk, the council suggested tentative levels for nutritious ingredients based on the findings of laboratory tests, according to Philip L. White, Sc.D., secretary of the council. It urged producers to make periodic analyses of their milk so that the physician is assured that it meets these nutrient levels.

Most Medical Students Subject To Military Service

Military service hangs like a sword over the lives of students enrolled in the country's 76 approved four-year medical schools.

A recent report by the American Medical Association disclosed that 81.5 per cent of all male students enrolled in medical schools during the 1955-56 academic year were subject to military liability. The number cited as liable for service makes no allowance for physical disabilities and other factors that would render an unknown percentage ineligible for service.

If You Plan to Move...

In order to avoid interruption of service, members who plan to move should give us at least *four* weeks' advance notice. Such notification should specify both the old and new addresses, and the *name.*

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Behne, D.; Clork, F.; Jennings, M.; Pollois, V.; Olson, H.; Wolf, L., and Tyler, E. T.: West. J. Surg. 64: 152, 1956.

Composition: nonylphenoxypolyethoxyethonol 5% in on oil-in-woter emulsion ot pH 4.5.

Cardiac Patients Can Now Safely Bear Children

Patients with congenital heart disease formerly died, but advances in heart surgery during the last 15 years have made it possible for them to live and even to bear children.

Five Detroit doctors recently reported the successful delivery of a normal child by a woman who had undergone a "blue baby" operation in childhood. The doctors said they know of only three other such cases. The report in a recent issue of *Archives of Internal Medicine*, published by the American Medical Association, was made by Drs. Jack M. Kaufman, Lucien A. Campeau, Paul E. Ruble, Joseph Monahan, and F. D. Dodrill.

The 20-year-old woman had undergone surgery for tetralogy of Fallot, a condition in which a defect in the artery between the heart and lungs prevents the blood from getting enough oxygen. The lack of oxygen causes a blueness of the skin. She underwent one operation at the age of nine and another at 14. She has since been well and has lived a normal life. Her pregnancy was normal, except for repeated episodes of impending labor during the last seven weeks. This is a common experience for pregnant cardiac patients, the doctors said. The baby, who was normal and vigorous, was delivered four weeks prematurely. The mother made an uneventful recovery.

The doctors said that definite conclusions cannot be drawn from the study of only four cases, but they suggest that the outcome of pregnancy in surgically treated tetralogy of Fallot patients "may not be as unfavorable as previously thought and that normal pregnancy and delivery may be expected."

However, they warned that this optimism should not jeopardize the careful management of these cases. The patient should be watched closely for excessive weight gain and for signs of heart difficulties during the pregnancy, and special precautions should be taken during delivery.

C.M.A. ANNUAL SESSION

PLAN TO VISIT THE TECHNICAL EXHIBITS LOCATED IN THE BALLROOM, SUNSET ROOM AND BOULEVARD ROOM. CASINO FLOOR.

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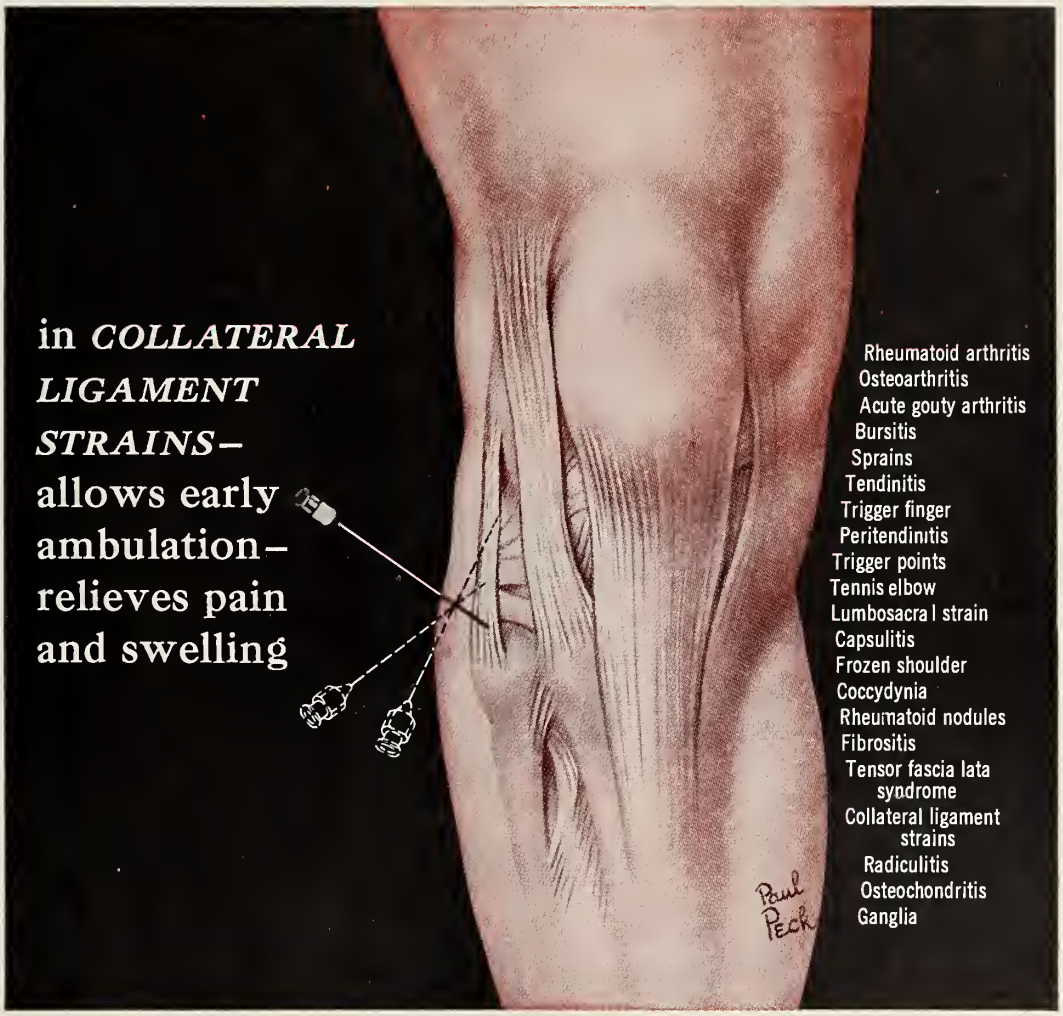

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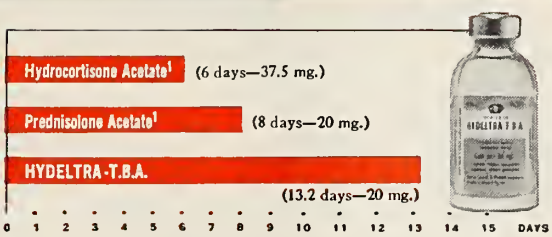

Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

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1. Hollander, J. L., *Paper read at conference in New York City, May 31 and June 1, 1955*

Disease Resembling Scarlet Fever Described

An apparently new disease with symptoms resembling those of scarlet fever, but without its seriousness, was reported recently by a Pennsylvania pediatrician.

Thirty cases were seen at the State Hospital for Crippled Children, Elizabethtown, Pa., from November 4, 1955, to April 4, 1956. Dr. Mary D. Ames, Harrisburg, Pa., said in the American Medical Association's *Journal of Diseases of Children.*

The scarlet fever-like symptoms were fever, sore throat, and a generalized, bright red rash. However, no streptococci, the causative agent of scarlet fever, were isolated from the throats of the patients and there was no scaling of the skin as in scarlet fever.

Dr. Ames pointed out that it is very important to distinguish between this new disease and scarlet fever because of the hardships that would follow wrong diagnosis. A diagnosis of scarlet fever means that the patient must be quarantined for at least seven days. In Pennsylvania, other persons residing on the premises cannot handle or sell foods, milk, candy, beverages, or tobacco. The child loses time at school and the adults may be cut off from necessary income, she said.

The rash in the new disease was present over the entire body, neck, and extremities, but was particularly marked on the groins and the back of the trunk. In scarlet fever the rash begins on the neck and later appears on the trunk and groins. The rash was also different from the characteristic rashes of red measles, German measles, infectious mononucleosis, and other known feverish eruptions.

Twenty-three children who were patients in the hospital, two doctors, two nurses, and a doctor's wife and two children were ill. The children were not remarkably ill and continued to be alert and active, but the adults were incapacitated for 24 to 48 hours with marked discomfort and weakness, Dr. Ames said.

The method of spread and the incubation period were hard to determine, she said. After the first two cases, the children were not isolated and the cases were rather spotty in the wards. Three times as many females as males had it.

The onset was abrupt with fever, sore throat, and general discomfort, followed in 12 to 48 hours by the appearance of the rash. Nausea and vomiting occurred in 17 patients, abdominal pain in 20, and signs of an upper respiratory infection in four. The average length of illness was three days. There were no complications. The course of the illness was not influenced by medication, she said.

C.M.A. ANNUAL SESSION
Los Angeles • April 28 - May 1, 1957

ALCOHOLISM?

A DEMAND for alcohol not to be confused with RESULTS of excessive drinking.

TREATMENT?

CONDITIONED RESPONSE THERAPY—not to be confused with so-called aversion treatments.

RESULTS?

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- Return of self confidence and self respect.
- Lessening of depression as shown by Minnesota Multiphasic Personality Inventory Score before and after Conditioned Response Therapy.

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C I B A
Summit, N. J.

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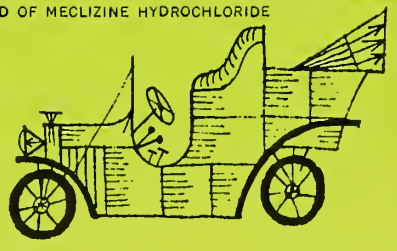

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1. Johnston, R.L.: J. Indiana St. M.A. 46:869, 1953. 2. McHardy, G., and Browne, D.: Southern M. J. 45:1139, 1952.

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Small Children Can Understand Reasons for Hospitalization

Any child, even a four-year-old, can understand why he is in the hospital if the reasons are explained to him in simple language, three San Francisco researchers said.

They said in a recent issue of the *Archives of Diseases of Children*, published by the American Medical Association, that a study of 100 children between the ages of three and 15 years showed that most of them were frightened and confused about why they were hospitalized, mainly because the reasons had not been adequately explained.

Only 25 children were able to give a good explanation and used medical terms which they understood. They seemed happier and more cooperative and showed that children are able to understand when explanations are given in simple terms, the authors said. For example:

A 10-year-old boy defined rheumatic fever as: "Your heart is tired and needs a rest."

A nine-year-old girl with hypothyroidism said she had a thyroid deficiency, which means: "I have no thyroid gland. A thyroid gland helps your food go all over your body, to grow, and if you don't take pills, you gain weight. I will have to take pills all my life."

An 11-year-old boy gave quite a lecture on nephritis, or as he said, "I have 'nethritis' in my kidneys, and I'm here for tests on me and to rest more."

He went on to explain, "It's not bad now, but if I walk around it will get worse and they can't stop it. . . . I'm not a bit worried. I know they will make me better, and if I stay in bed, I can't get any worse. Since I've been here, they've taken blood tests. They had to do it 13 times to get blood nine times. It didn't feel good, but if it shows I'm getting better, I'll never miss it."

A four-year-old girl, seen before she had her tonsils and adenoids removed, said, "They're going to take my tonsils out." She explained that her tonsils are "in the back of my throat, and they're going to take out something else back of my nose. I have to stay one and a half to two days."

The authors observed, "It is evident from the comments of the older boy and girl how important is the . . . child's understanding of his illness in relation to his cooperation with procedures and in his follow-through on future care."

Twenty-six children who had had no preparation for their hospitalization showed considerable confusion about the reason why they were there. For example:

An 11-year-old said, "My mother never told me. I guess 'cause I'm sick, so I can get better. Hard to remember. I don't think she did tell me though."

Twenty-two children had been given vague rea-

(Continued on Page 14)

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Small Children Can Understand Reasons for Hospitalization

(Continued from Page 10)

sons. A three-year-old said, "To be fixed up." He was, however, unable to say what was to be fixed, the authors said.

A six-year-old answered, "To get me well," but he, too, was unable to elucidate further.

Twenty-seven children's only preparation had been overhearing symptoms or diagnoses, which further questioning revealed they did not understand.

A 10½-year-old boy said his spleen had been removed during an earlier hospitalization. He described his spleen as "a big, round thing that grows pipes; luckily mine didn't. A friend of mine's did, and they didn't get the pipes out and he died." He had no idea what the "pipes" were.

An even more confused explanation was given by a six-year-old boy in the hospital for fever of undetermined origin. He said he was there to find out why his head hurt, which he explained as:

"Mother thinks I got wool in my lungs from an old blanket. I passed some of it up through my nose.

(Continued on Page 31)

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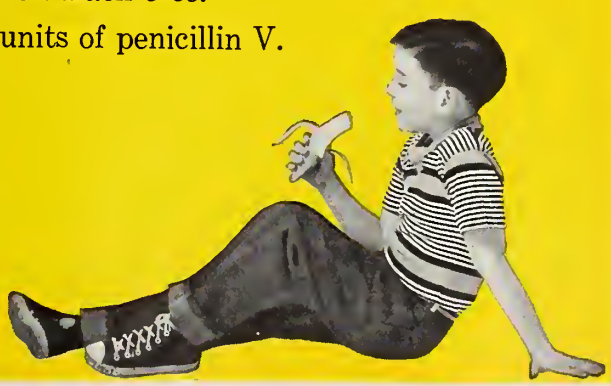

Abbott

Radiologist Calls for Wider Use of Chest X-Rays

A Wisconsin radiologist recently listed several reasons why a chest x-ray should be part of the routine procedure when a patient enters a hospital.

Dr. Abraham Melamed of Evangelical Deaconess Hospital, Milwaukee, and St. Joseph's Hospital, West Bend, Wisconsin, said in a recent issue of the *Journal of the American Medical Association* that routine chest x-rays are performed in only 30.1 per cent of all the hospitals in the United States.

Routine x-rays should be done in all hospitals, he said, because:

They uncover many previously unsuspected cases of chest abnormality or disease, especially tuberculosis and heart disease. Prompt treatment decreases the length of hospitalization, lengthens life, and stops the spread of communicable diseases.

They prevent some errors in diagnosis, since the films may be used as checks against other findings.

They provide valuable information to doctors preparing patients for surgery by showing the condition of the patient's lungs and heart. In this way the x-ray findings often have a direct bearing on the choice of an anesthetic.

They provide a permanent record of a patient's chest condition during past hospitalizations. This helps make diagnosis of current conditions more reliable and accurate.

Since more than 20 million patients are annually admitted to hospitals in the United States, x-ray films could provide valuable data for the study of various diseases, their effects, and their incidence.

X-ray films can be important records in compensation and accident cases. They show the condition of the patient immediately after the accident and can even reveal unsuspected injury.

They plan an important role in the teaching program of the hospital, by providing the staff with an opportunity to learn the appearance of average or normal chest x-rays, which can then be compared with films of diseased chests.

Infectious Hepatitis Grows as Public Health Problem

Infectious hepatitis is creating more interest among public health workers than probably any other virus disease except polio, an American Medical Association publication stated.

The number of reported cases has "jumped dramatically" since hepatitis was added to the list of nationally reported diseases in 1952, and it is now the third most common infectious disease in the United States, according to an article in a recent issue of *Today's Health.*

"Whether this represents an actual increase in incidence or merely better recognition . . . is open to question. But one thing is certain: Never before has concern over it been so high," Miss Marion A. Briggs, a New York free lance writer, said in the article.

Its importance is not in the number of deaths it causes, which are few (only three to five in 1,000 cases), but in the long time its victims must spend in convalescence—from two to three months.

In addition, it is estimated that about 30 per cent of the adult population has had infectious hepatitis without knowing it. These mild unrecognized cases constitute a threat to a community since they provide unknown carriers of the disease, Miss Briggs said.

Infectious hepatitis, called "camp jaundice," "field jaundice," "catarrhal jaundice" and "infectious jaundice" in the past, is an inflammation of the liver; one of its common symptoms is jaundice—a yellowish color of the skin and eyes.

A major problem created by the disease is that its causative agent—generally believed to be a virus —has never been isolated. This in turn has prevented the development of a specific treatment or a preventive vaccine. The best treatment is still bed rest and a good diet.

Hepatitis' most common means of spreading is apparently by personal contact. When one member of a family gets it, other members almost always get it too. It has been known to be spread by drinking water, food, and milk. Flies have also been suspected.

When an outbreak occurs, its spread can be largely controlled by immediately inoculating exposed persons with gamma globulin, the blood fraction which contains disease-fighting antibodies.

The incubation period is usually about 25 days, although it may be as long as 40 to 60 days. The symptoms include fever, chills, nausea, vomiting, diarrhea, joint and muscle pain, fatigue, loss of appetite particularly for fats, pain in the abdomen, itching, and a marked dislike for tobacco and alcohol. Jaundice, due to the accumulation of bile pigments in the blood and tissues, usually appears after four or five days and remains to some degree for three to five weeks.

Adequate bed rest during the acute phase and avoidance of alcohol and too much physical exertion for six months to a year are important in preventing such complications as chronic liver disease, the author said.

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Injections Used to Treat Low Back Pain

Much low back pain, sciatica and referred pain in the lower extremities can now be eliminated by a very simple treatment: injections of vegetable oil and an anesthetic.

Dr. George S. Hackett, Canton, Ohio, developed the treatment and has used it for the last 14 years. He said in a recent issue of the *Journal of the American Medical Association* that 82 per cent of 1,178 patients treated with the injections "consider themselves cured."

Dr. Hackett's injection treatment causes new cells to be produced in bone and fiber tissue at joints where the pain originates. It is based on his belief that relaxation of the ligaments which "weld" these joints is the cause of more low back pain and referred pain than any other factor.

When a ligament is relaxed, normal tension or movement stretches the fibers. This overstimulates the sensory nerves because they do not stretch. Thus pain is produced either at the site (called "trigger-point pain") or in some other part of body (referred pain).

The diagnosis that pain is the result of ligament relaxation can be verified by "needling" with a local anesthetic solution. The point of the needle is inserted within the disabled ligament. The irritation produced by the needle together with the pressure of the solution will immediately produce the local pain and frequently the referred pain, both of which will disappear promptly as anesthesia takes place.

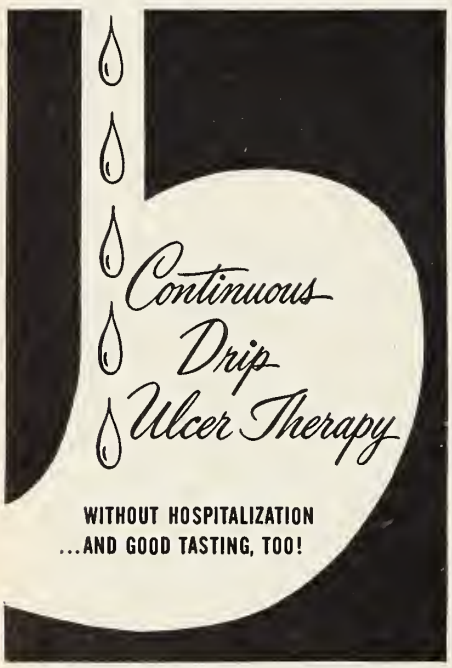
Treatment consists of making the ligaments and bone grow new tissue in the "weld" between the ligament and bone. This treatment is called "prolotherapy," which means stimulating production of new cells to rehabilitate an incomplete structure. A solution which causes the stimulation in the bone and fibrous tissue is injected into the relaxed ligament at its junction with the bone.

Treatment by as many as six injections is usually given in the doctor's office, but more incapacitated patients are treated in the hospital, where as many as 20 injections can be given in one day while the patient is anesthetized, Dr. Hackett said.

It usually takes a month for the production of new cells. Patients report for evaluation at the end of six weeks. They themselves know when they are cured. Mr. Hackett said.

His patients have ranged in age from 15 to 88 years. The duration of disability before treatment ranged from three months to 56 years, with an average of four and a half years.

Dr. Hackett pointed out that tendon attachments to the skeleton also become relaxed and respond to the treatment.



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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. 22:67 (Mar.) 1955.

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References: 1. Piper, C. E., and Nicklas, F. W.: Indust. Med. 23:510, 1954. 2. Blank, P., and Boas, H.: Ann. West. Med. & Surg. 6:376, 1952. 3. Chasko, W. J.: J. District of Columbia Dent. Soc. 31:3, No. 5, 1956. 4. Cass, L. J., and Frederick, W. S.: M. Times 84:1318, 1956. 5. Bonica, J. J.: GP 10:35, No. 5, 1954.

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Varicose Leg Ulcers Treated With Human Placenta

A new rapid method for treating varicose vein ulcers by using human placenta was described recently by an Ohio physician.

Dr. Fred R. Denkewalter, department of surgery, Ohio State University College of Medicine, Columbus, said the treatment is similar to one devised for war wounds by a French army doctor.

He said in the American Medical Association's recent issue of *Archives of Surgery* that the method does not give a "permanent cure" to the problem of chronic leg ulcers. However, it does reduce the time and expense necessary for relieving the condition, while giving the patient complete freedom of movement. The time necessary for healing of the ulcers is a matter of weeks instead of months as with older methods.

The placenta is the round, flat organ within the womb which establishes communication between mother and child by means of the umbilical cord. As soon after delivery as possible, one layer of the placenta is washed with a salt solution, cut into cubes, and stored in jars. It can be kept in an ordinary refrigerator for as long as three weeks.

The cubes are cut into the required shape and placed in the ulcer crater after it has been cleaned. The ulcer is then covered with gauze and an elastic bandage. The dressing must be changed at intervals.

Dr. Denkewalter used placenta to treat 22 varicose ulcers. Sixteen of these ulcers were obliterated during the first seven weeks of treatment, eight requiring four weeks or less for complete healing. In the others, a second application of placenta was necessary.

He explained that placental tissue "by its very nature is concerned with cellular growth" and it seems reasonable that the placental cells stimulate the growth of new cells in the ulcer crater.

The placental cells contain hormones, enzymes, vitamins, immune bodies, nutrients, and various other "chemical building blocks" which have a favorable effect on cellular growth. It is also possible, he said, that the placental material acts as a "lattice" through and around which healthy tissue may grow.

The placenta treatment for six leg ulcers from other causes, including hardening of the arteries and burns, was generally unsuccessful, he said.

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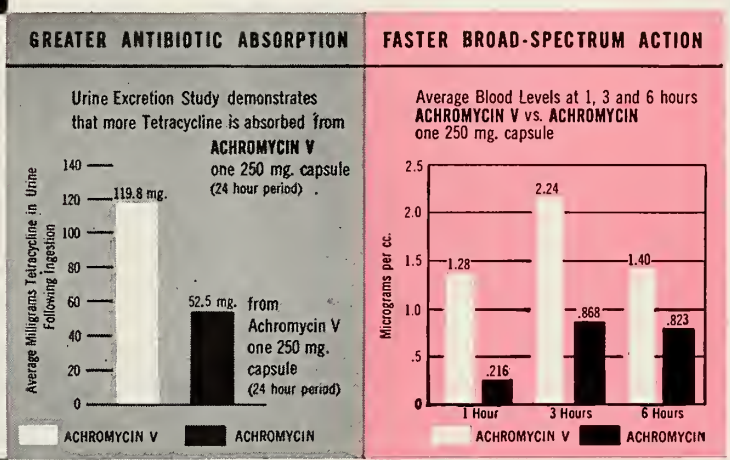

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Standard Syphilis Tests Detect Other Diseases

The standard laboratory tests for syphilis at times help detect other diseases even before their physical symptoms appear, according to a guest editorial in a recent issue of the *Journal of the American Medical Association.*

Dr. Charles R. Rein and Louise C. Kelcec, M.T., of the New York University Post-Graduate Medical School and University Hospital said that persons who react positively to the standard syphilis tests—although they do not have syphilis—frequently already have or later develop one of the degenerative diseases. This false-positive reaction occurs especially with rheumatoid arthritis and lupus erythematosus, a very serious skin disease. These patients may have positive test reactions one or more years before recognizable symptoms appear.

Because of the recent development of highly specific tests for syphilis, many laboratories are considering discarding the routine standard tests. However, this is not advisable, the authors said, since they are still the most effective screening device for syphilis. In addition, they offer—through the false-positive reaction—a means for early detection of such diseases as rheumatic fever, periarteritis nodosum, and scleroderma.

(Continued on Page 42)

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(Continued from Page 38)

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Just buying and wearing a hearing aid is not enough, two Denver hearing specialists said recently. A deaf person must make sure that it is properly fitted and that he learns how to use it correctly.

Writing in a recent issue of the *Archives of Otolaryngology*, published by the American Medical Association, Dr. George L. Pattee and Lee A. Cary, M.A., said that training in the use of a properly-fitted hearing aid can greatly increase its value. For instance, one patient with nerve deafness improved

(Continued on Page 46)

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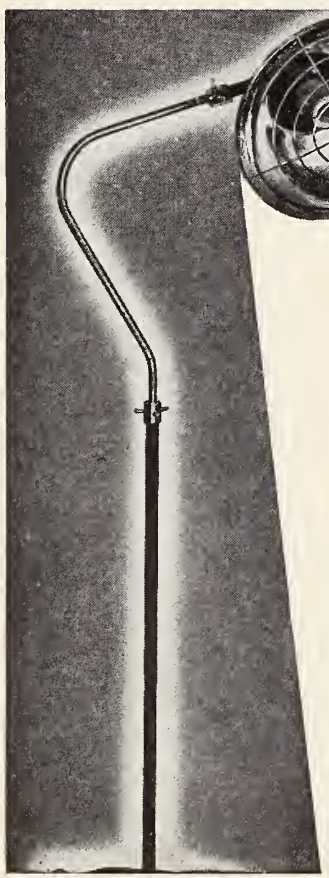

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2. Wagner, H.: Landarzt *31*:496, 1955.
3. Jörgensen, G.: Arztl. Wchnschr. *10*:82, 1955.

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(Continued from Page 42)

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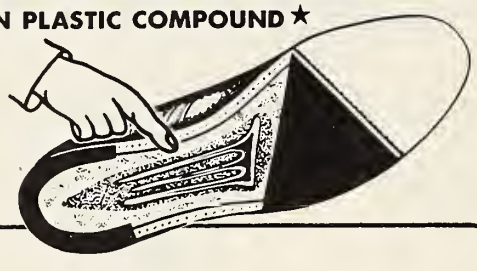

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Tube Used to Prevent Collapse of Lung

A "dead-space rebreathing tube" today was called a simple, inexpensive, and effective method for preventing and treating atelectasis, or collapse of the lung.

Three Rochester, New York, researchers said in a recent issue of the *Journal of the American Medical Association* that atelectasis is a common and often dangerous complication occurring after surgery or in situations such as pneumonia, in which secretions collect in the lungs and prevent them from getting enough oxygen.

Frequent coughing or turning by the patient helps somewhat, but breathing carbon dioxide is the best method for combating this complication.

The authors said breathing through a rubber tube, which is placed in the patient's mouth while his nose is held shut, is more effective than the standard method of breathing into a paper bag and less expensive and simpler than breathing pure carbon dioxide through a face mask. They have used the tube without difficulty for 1,000 patients at the Strong Memorial and Rochester Municipal hospitals, Rochester.

Here's how the dead-space rebreathing tube works:

When the breath is exhaled, some air still remains in the lungs in what is called "dead space." Of course, the air is changed as fresh air enters from the outside and carbon dioxide is given off.

However, if the tubes leading to the alveoli—the tiny air sacs from which oxygen enters the blood stream—become clogged with secretions, there is no way for the oxygen to enter the sacs and no way for the carbon dioxide to leave. So the alveoli shrink, or collapse, and the carbon dioxide accumulates in the blood.

This accumulation of carbon dioxide in the blood stimulates the nervous system to increase the breathing rate. Rapid breathing helps clear out the secretions and keeps fresh air moving into the alveoli.

However, during illness the body cannot always do this alone. That's where the dead-space tube enters.

Actually it serves as án extension to the lungs. Because not all the air can be drawn from the other end of the tube, a dead space occurs in the middle of it. The patient "rebreathes" his own carbon dioxide as it accumulates in the tube's dead space. This raises the blood carbon dioxide level and stimulates the breathing rate, which in turn helps unclog the lungs.

The tube is used once every two hours for five minutes. This is sufficient, the authors said, to keep the lungs unclogged and expanded.

The authors are Dr. Seymour I. Schwartz, Dr. W. Andrew Dale, and Hermann Rahn, Ph.D., of the departments of surgery and physiology at the University of Rochester School of Medicine and Dentistry.

California MEDICINE

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Symposium on Pain

Introduction by
ROBERT B. AIRD, *M.D.*, San Francisco

Part I

Pain, since it is the principal warning symptom of disease, is of great diagnostic value. Furthermore, when recurrent and intractable, pain assumes the proportions of a disease entity in its own right and may present difficult problems of management. Thus, pain is of primary importance to all branches of medicine—to general physicians and specialists alike. In the development of the present symposium, therefore, care has been taken to cover the basic factual data and concepts of pain—neuroanatomic, neurophysiologic and psychologic. With this background, problems of pain as seen by certain representative clinical groups have been included. Clinical groups were selected that would bring out recent advances in this field and that would illustrate the more common and important types of pain of interest to all branches of medicine.

The second reason for the development of this symposium concerned the unique opportunity afforded us by our guest faculty and the presence in the University of California School of Medicine of the "Biomechanics Group," headed by Dr. Inman, which for several years has devoted itself to the fundamental aspects of pain. Professor Georg Schaltenbrand, recent winner of the highest honor in German neurology, the Erb Medal, and director of the Neurological Clinic at Wurzburg, participated in the clinical portion, while H. Houston Merritt, professor of neurology at Columbia and also director of the Neurological Institute of New York City, and Dr. Arnold Friedman, chief of the Headache Unit of the Montefiore Hospital, participated in the portion of the symposium devoted to headache. All are recognized authorities on their subjects. Because of their fundamental contributions, few, if any, other groups would be better qualified to discuss the basic concepts of pain than the members of the "Biomechanics Group" selected for this purpose.

This symposium on pain thus has been a logical and timely development both from the standpoint of its desirability and the unique opportunity afforded us of doing it well.

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Dr. Aird is professor and chairman, Department of Neurology, University of California School of Medicine, San Francisco 22.

Basic Concepts

VERNE T. INMAN, *M.D.*, San Francisco

The literature on pain is extensive and confusing, and I think one of the reasons is that pain, in itself, is not a discrete form of sensation as classically presented in the textbooks. To assume that pain is a sensation comparable to the other exteroceptive sensations seems to me to make the problem more difficult by over-simplification. For all sensations, except pain, the body has created certain end organs, or certain mechanisms, by which it can record or react to such specific stimuli as light, sound, touch, pressure, and temperature. These are physical phe-

Dr. Inman is professor of orthopedic surgery, University of California School of Medicine, San Francisco 22.

nomena, which can be recorded with accuracy by scientific instruments. This makes it possible to relate the objective stimuli to the subjective responses of the body.

This is not true of pain, which cannot be measured objectively and which exists only in the person experiencing it. Because of its subjectivity, one can only acquire a knowledge of pain through one's own sufferings or by communication with others. Often words are inadequate to express feelings or to describe accurately the sensations one feels. Because of the inability of words to express precise meanings and to create feelings, the investigation of pain is fraught with all the difficulties of communication.

A third difficulty arises if we fail to make a clear distinction between an individual's reaction to pain and the painful stimulus. It should be clearly understood that an individual's reaction to pain may be quite distinct from the sensation he is experiencing. While the perception of pain and the reaction to pain may be causally related, the individual's reaction to pain often appears to be quite out of proportion and independent of the magnitude of the painful stimulus.

In our own studies, we find that the same stimuli applied to the same tissues in different individuals may bring quite different reactions, varying all the way from mild protestations to complete vasomotor collapse. This difference was expressed very well by Wolff and Goodsell: "The age-old linkage between the perception of pain and the reaction to it has filled a vast literature on the subject, especially that based on animal experiments, with irrelevancies and contradictions. And since perceptions and reactions are not identical, their separation should be attempted in any study of pain, so that proper evaluation of experimental procedures will result, and obviously the reactions to pain belong perhaps to a great extent in the realm of psychiatry or psychological response, rather than in the field of pure laboratory experimental procedures carried out on pain."

The study of pain, therefore, is not a study of a simple sensation. Nevertheless, in spite of its difficulties and the confusion of the literature, it is an important field in which to pursue investigations. It is only through persistent effort and the accumulation of knowledge that we can hope to understand pain and eventually to alleviate some of the suffering that we see every day.

We will begin this symposium by presenting what is known concerning the neuroanatomy of pain. This will be followed by a consideration of some of the experimental work in the neurophysiological laboratories, and then a discussion of the psychological considerations of pain.

Neuroanatomical Considerations

HENRY J. RALSTON, *Ph.D.*, San Francisco

In the last century the Swedish physiologist Magnus Blix[1] was the first to investigate in a systematic way what we now call punctate sensation. Blix studied the effects of stimulating very small areas of the skin and showed fairly specific types of sensation localized in different areas. The sensations which can be produced by stimulation of the skin are commonly spoken of as the modalities of sensation. The classical modalities as described in every textbook of physiology are pain, cold, warmth and touch.

Blix's studies were greatly extended by the German physiologist von Frey.[6] He developed a semiquantitative method of studying the relationship between stimulus and sensation. The von Frey hair (esthesiometer) consists of a hair which has been calibrated in terms of the force necessary to produce a certain distortion of the hair. With such a hair, one can describe the force used in producing a certain cutaneous sensation.

In the course of time a variety of end-organs in the skin were described. These included such structures as the Meissner corpuscles, which were identified with touch; the Pacinian corpuscles, commonly thought of as giving rise to sensation of pressure; the Krause end-organs, identified with sensations of cold; the Ruffini end-organs, commonly associated with sensation of warmth; and so on. Although none of these end-organs specifically have been associated with the sensation of pain, it is highly probable that several, if not all, may mediate the sensation of pain if subjected to a sufficiently intense stimulation. The specialized end-organs frequently have a dual innervation, consisting of a primary nerve fiber and another nerve fiber of a smaller caliber, which is commonly associated with the transmission of pain. It is, therefore, likely, in some instances at least, that the pain elicited by intense stimulation of a specialized end-organ is simply due to the stimulation of the small accessory nerve fiber.

Unfortunately, cutaneous sensation appears to be much more complicated than the early physiologists supposed. There is a good deal of evidence to show that the different modalities of sensation do not correspond precisely with the particular types of end-organs as had been supposed.

Recently Sinclair and co-workers[5] studied sensation in the skin of the human ear and showed that the usual sensations can be aroused by stimulating this area, but that histologically the skin of the ear

Dr. Ralston is research physiologist, University of California, and professor of physiology, College of Physicians and Surgeons, San Francisco 3.

contains none of the well-defined types of sense organs already mentioned. The skin of the ear does have a very rich innervation of small fibers with bare nerve endings, which presumably may mediate the various modalities of sensation present.

On the other hand, in other areas of the body the types of end-organs far exceed in number the types of sensation. This has been shown in experiments (described by Ruch as "heroic experiments") in which the prepuce was stretched and the sensory modalities studied and then compared with histological studies made upon similar skin. Seven or eight different kinds of well-defined end-organs were present, but only the usual four classical modalities of sensation. Why there should be such a great superfluity of these end-organs is perplexing.

Other difficulties complicate an understanding of sensation. One is concerned with the sensation of cold—so-called paradoxical cold. Cold receptors will fire over a range of about 25° to 32°C. and then will cease to fire above these temperatures, until a temperature of about 45°C. is reached, at which time another peak of activity of the cold receptor is attained. In other words, a cold receptor is an end-organ which will respond not only to temperatures below body temperature, but again to a temperature close to what can be tolerated and, in fact, close to the temperature that will result in destruction of the tissue if it is continued for long. Pain is also produced at about this same temperature. Thus, high temperatures may produce a simultaneous firing of receptors associated with the sensations of cold and pain. Obviously, then, the physiological factors which enter into the responses of end-organs may be very complicated. It is impossible to lay down any simple rule governing the relationship between a particular sensation and a particular sense organ.

The role played by small nerve fibers, now commonly associated with the sensation of pain, was not understood until the second and third decades of this century. The American anatomist, Ranson, made the first great studies on the distribution of small nerve fibers. Ranson[4] showed that in peripheral nerves, innervating both skin and muscle, and also in the dorsal roots of spinal nerves, there are large numbers of very small amyelinated fibers which outnumber the larger myelinated fibers. In some cases the ratio is as high as 4:1 or even higher. Small nerve fibers are also found in great numbers within the spinal cord itself.

Ranson showed in cats that these small fibers become segregated from the other fibers entering the cord and form a distinct lateral tract in the dorsal root. The small fibers of this tract of Lissauer enter the substantia gelatinosa of Rolando within a segment or two after they enter the cord. The small fibers, therefore, constitute a separate pathway and follow a separate course. They cross over to the other side of the cord and ascend in the lateral spinothalamic tract, which we now recognize as the tract primarily responsible for the transmission of pain.

Ranson, in experiments on cats, studied the effects of afferent stimulation upon such autonomic responses as heart rate and blood pressure. He then cut the lateral portion of the dorsal root containing the small nerve fibers and repeated the stimulation. In this instance, the typical autonomic responses did not occur. He thus showed that those responses ordinarily associated with pain, such as struggling, rise in blood pressure and rise in heart rate, are abolished when the small nerve fibers are cut. Although the evaluation of pain in the experimental animal presents obvious difficulties, Ranson's experiments, nevertheless, seem to provide a fairly secure basis for the assumption that the small fibers are the primary means of transmission of painful impulses.

In man, the small fibers do not become segregated in the clear-cut manner they do in cats. In the case of the trigeminal sensory fibers, however, there are several different roots, one of which is the so-called "bulbospinal root" forming the bulbospinal tract that runs to the spinal nucleus of the trigeminal nerve. This particular tract contains practically all the small fibers of the trigeminal nerve. Sectioning of the bulbospinal tract in man rather completely abolishes painful sensations arising from the face. So, in the trigeminal nerve of man, at least, we have an anatomical situation which is analogous to that which exists generally in the spinal nerves of cats.

Small nerve fibers are widely distributed throughout the body. We find them in the periosteum, in fascia, in muscles—nearly everywhere. Although the precise function of these nerves is still a moot question, it seems safe to assume that frequently they are responsible for the transmission of pain impulses. We know that pain of a very severe type may arise from many deep structures and often is of a peculiar and severe nature. For example, pain arising from the periosteum is of a particularly unpleasant character, frequently resulting in nausea and even syncope.

The American physiologists Erlanger and Gasser[3] laid the basis for the modern classification of nerve fiber types in their brilliant monograph, *The Electrical Signs of Nervous Activity*. Erlanger and Gasser classified nerve fibers into three main groups, the A, B, and C groups. These were further subdivided, so that the A group contains four subgroups of alpha, beta, gamma, and delta fibers. The C fibers are divided into two groups, the sympathetic or s-group of C fibers, and the dorsal root or dr-group of C fibers. These classifications are based

upon such criteria as the diameter of the fibers and the velocity of the nerve impulse in the fibers. In general, the large fibers conduct impulses most rapidly, and the small fibers least rapidly. Also, myelinated fibers tend to conduct impulses more rapidly than amyelinated fibers. The A fibers range in size from 1 or 2 microns up to 20 or more microns in diameter, and they may conduct impulses as rapidly as 100 meters per second or even faster. The B fibers have a diameter of the order of 3 microns and conduct impulses at about 15 meters per second. The C fibers have diameters of the order of 1 micron and conduct impulses at the rate of 1 to 2 meters per second.

As a result of Ranson's studies in cats, as well as studies by other investigators, it is customary to identify the transmission of pain with small fibers, in particular with the C fibers and the delta division of the A fibers. The C fibers occur in the dorsal roots of spinal nerves and also in visceral nerves. The cranial nerves contain relatively few C fibers. Presumably, pain is predominantly mediated in the cranial nerves via the A-gamma and A-delta fibers.

Amyelinated fibers are relatively resistant to asphyxia or anoxia, as compared with large fibers; small fibers are more sensitive to the action of anesthetic agents and toxins than are large fibers. Pressure applied to a nerve will block larger fibers before it will block smaller fibers. The use of anesthetics in blocking small fibers is a common method used by physicians and dentists for the prevention of pain. Pressure has been used by physiologists to block large fibers in experimental investigations. We know of many instances in which large fibers must be blocked, as in asphyxial or anoxic states, while the smaller fibers are still firing. Such a situation occurs, for example, in an area where ischemia exists. Ischemic pain arising in the myocardium and in skeletal muscle is of particular interest to clinicians.

Care must be used in assuming that the results of animal experimentation apply to humans. Distinct differences exist between the nerve-fiber distribution in animals and in human subjects. Although visceral fibers tend to be of the small type in animals, such as the monkey, recent studies indicate that in man there are many very large visceral fibers. There is also good evidence that cutaneous nerves in man contain a relatively large number of large fibers—fibers which, in fact, may be the largest in the body. The presence of large fibers, both in the visceral area and in the skin, may account in some measure for the rather exquisite types of sensation which occur in man. We must be cautious, therefore, in applying the results of animal experimentation to man, without being careful to check the anatomical situation in man.

Brookhart and his colleagues in Oregon[2] have described a preparation for the study of pain in cats which is likely to yield important information. These investigators have chosen the dental pulp as a convenient preparation for study. The dental pulp can be stimulated by suitable electrical means and recordings made from various areas of the brain, particularly the mesencephalon and diencephalon.

There is good evidence that the dental pulp is supplied only by small fibers belonging, not to the C group, but to the A-gamma and A-delta groups. The nerve fibers supplying the human dental pulp correspond in their fundamental physiological characteristics very closely with the A-gamma and A-delta nerve fibers in cats.

The Oregon workers have already shown the presence of at least two new pathways for pain in the brain, which involve the central gray and reticular substance. Considering other recent studies on the reticular formation and the functions ascribed to this structure, it is of particular interest that the Oregon workers have been able to record electrical activity from it in response to stimulation of the dental pulp. We may conclude from such studies that the classical pain pathways worked out by Ranson and other anatomists may not be the only routes for the transmission of pain. This may account for the fact that some operative procedures which, on the basis of classical considerations and classical description, ought to relieve pain, sometimes do not. This apparent discrepancy might be explained if extra pathways, perhaps quite diffuse in nature, are available for the transmission of painful impulses.

It is interesting to consider the possible significance of nerve fibers of differing diameters. What is the physiological significance of different-sized fibers in the same nerve? As Gasser has pointed out, it may be that, with a variety of sizes of nerve fibers conducting at different velocities, the central nervous system is stimulated in a manner which would not occur if all of these fibers conducted at the same rate. If two types of pain fibers, for example, are stimulated simultaneously, central stimulation would occur in a less synchronized manner if the two nerve fibers conducted at different rates than if they conducted at the same rate. It might be, according to Gasser, that the differences in the time of arrival of impulses in the central nervous system are the mechanism by which the brain interprets sensation. This, however, is pure speculation until further evidence is available. Actually, we know very little about what happens within the central nervous system after the various nerve impulses arrive there. It is at this point that our neurophysi-

ological knowledge fails us and that we must depend upon psychological methods of study.

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Neurophysiological Aspects

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In discussing the clinical aspects of pain, it should be emphasized that we are less interested in the sharp, pricking type of skin pain, which has been the subject of classical physiological investigations, than in the deeper aching, burning and crushing types of pain which tend to persist, to become chronic, and which frequently produce an exaggerated response on stimulation.

In the preceding paper, Dr. Ralston presented evidence to show that the small-diameter sensory nerve fibers are more concerned with the transmission of pain than are the larger nerve fibers. A different hypothesis has been fostered in recent years by Sinclair[14] and others at Oxford. This theory relates the sensory modalities to certain patterns of nerve impulses that are spatially and temporally dispersed, rather than to fiber size.

In my opinion, a modification of the theory based upon the specificity of fibers is more satisfactory than either the classical fiber-groups theory (see also Gasser[6] and Bishop[3]) or a "pure" patterns theory which disregards the significance of fiber-size groupings. The modifications suggested include the following points: (a) That pain, especially the sharp, "fast," epicritic type, is not transmitted exclusively by small fibers and certainly not exclusively by the amyelinated C-fiber group (although the deep aching pain may be more closely tied to the latter); (b) that sensory modalities other than pain may not be exclusively transmitted by the larger fibers; and (c) that sensory impulses arriving in one size-type of nerve fibers may, by interaction in the central nervous system, modify the quality and intensity of another sensory modality mediated simultaneously by another size-type of fibers.

According to still another view of the peripheral mechanisms for transmitting pain, any stimulus, if strong enough, leads to the perception of pain because of the number of nerve fibers activated and the frequency of impulses in each fiber. Pain would thus be a matter of degree, or intensity, of stimulation and not of any specificity of fiber groups (*e.g.* see Schiller[13]). As a general case, this hypothesis is almost certainly invalid. For example, one can electrically stimulate the ulnar nerve through the skin at a variety of frequencies and with an intensity that is undoubtedly activating most of the larger myelinated fibers, and this results merely in a tingling sensation, referred to the area of representation of the nerve (Thompson, *et al*[16]). In this situation the intensity of the nerve impulse barrage from the area of representation is greater than would occur with a small pinprick producing pain. Moreover, clinical pain occurs not infrequently in situations which appear to involve decreased rather than increased sensory input, as with incomplete nerve regeneration or amputation. On the other hand, it is true that many stimuli do become painful when they reach a certain intensity. It would seem more appropriate, however, to explain this common property in terms of local injury, which usually is present when such an intensity of stimulation is reached. Such an "injurious" stimulation, even though common to various modalities of stimulation, might be mediated by relatively specific groups of fibers that give rise to pain perception.

If the small nerve fibers, particularly the amyelinated or C fibers, are importantly concerned with the transmission of impulses leading to pain perception, then we need to know a great deal more about the activation and function of these nerve fibers under different environmental conditions. This knowledge would be especially important to our understanding of such abnormalities as neuroma in amputees, and points of pressure or ischemia affecting nerves.

For example, do these small nerve fibers have a low threshold for certain types of chemical stimuli as compared with larger myelinated fibers? Abnormal chemical environments, such as acids, hypertonic solutions and the P-factor,* tend very readily to elicit pain as compared with other sensations. Some preliminary reports show that the amyelinated C fibers have little or no power of accommodation as compared with other nerve-fiber groups.[9] This

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**Pain factor:* Some possible specific chemical liberated in the injured tissue which acts as an exciting agent to the painful endings.

means that they would not require sharp changes in the environment in order to be activated, but would respond to slowly changing or even steady stimulation. Their poor accommodation would fit in with the idea of their being sensitive to chemical stimuli and might also help to explain the chronic nature of some pain in terms of sustained repetitive excitation by chemical agents abnormally present in the area. With respect to pressure, there is a suggestion from work by Aird and Pfaffmann[2] that light pressure on an isolated nerve can produce spontaneous firing of impulses in the smaller nerve fibers more readily than in the larger ones.

Artificial Synapse or Ephapse

It was demonstrated some years ago that a nerve impulse traveling in a given fiber produces fluctuations in the excitability of other nerve fibers alongside it. Under certain abnormal conditions, the adjacent nonconducting fibers may be stimulated to propagate nerve impulses, thus creating a so-called artificial synapse or ephapse (for discussion, see Lloyd[12]). One such abnormal condition, demonstrated by Arvanitaki, involved the removal of calcium ions locally by placing a drop of sodium citrate on an invertebrate nerve. Granit and co-workers[8] showed that the cut end of a nerve, at least for several minutes after the nerve had been transected, acted as an ephaptic region. Moderate pressure on a nerve trunk—insufficient to block nerve conduction—is capable of producing an ephaptic region. Cross stimulation has been found to occur much more readily from motor nerve fibers to sensory nerve fibers than from sensory to motor.

It is tempting to postulate that certain types of chronic pain may be due to the creation of ephapses. Thus, in neuroma the conditions may be particularly favorable for the ephaptic stimulation of sensory nerve fibers and especially those mediating pain. Although this is yet to be demonstrated experimentally, patients occasionally behave in such a way as to suggest this explanation. Dr. Inman recently brought to the attention of our group a man who had suffered an avulsion of the arm, which left him with considerable paralysis and sensory loss in the hand and forearm. The patient suffered a good deal of aching pain, largely referred to the anesthetized and paralyzed hand. The pain was greatly increased when he tried to move the muscles of his hand, and this in spite of the fact that no visible muscular movements resulted from his effort. This might be explained if we assumed that motor impulses, initiated by the patient's voluntary effort, were able to produce cross excitation in some of the sensory nerve fibers at a point in the same peripheral nerve that was made ephaptic, either directly or indirectly, by the avulsion process.

CENTRAL FACTORS

Aside from psychological factors (discussed by Dr. Albronda in this symposium) physiological processes at various levels of the central nervous system would appear to be important, or even essential in the production of chronic pain. First should be mentioned the well-known referral and radiation of pain in accordance with the segmental patterns of organization within the central nervous system. These phenomena are particularly characteristic of the deep and aching variety of pain. Also, it is a common experience that a counter-irritant applied to the skin may mask the sensory perceptions received from another part, provided both parts are innervated by the same segment of the spinal cord. In this same connection, deep pain may be relieved by rubbing or pounding the affected area. In both instances it would appear that increasing the peripheral sensory input from the affected region results in less pain rather than in more. Thus, all painful states cannot be explained simply in terms of a peripheral focus firing nerve impulses into the central nervous system. Similarly it has been demonstrated by our group that phantom pains in amputees can be dramatically altered by increasing the sensory input into the same spinal cord segments with hypertonic saline injections into the appropriate interspinal tissues.[17]

One possible explanation of such phenomena concerns a segmental interaction within the central nervous system so that the perception associated with one type of sensory input is modified when there is another type or source of sensory input arriving at the same time and at the same level of the spinal cord. For example, an increased sensory input from the larger myelinated nerve fibers might conceivably mask sensory impulses arriving in smaller nerve fibers, such as those giving rise to painful perception. Interactions of this type at the level of the spinal cord are at present under investigation in our laboratory.

The effects of chronic rather than acute alterations in the quantity or quality of sensory input may produce similar, or perhaps even more striking, abnormalities in the responsiveness of the central nervous system to normal sensory input. Pain syndromes may be associated with a chronic deficiency in the normal total sensory input from an area, such as, for example, might occur with transected peripheral nerves, with long-lasting functional blocks and in amputations. On the other hand, pain syndromes may be associated with a chronically increased sensory input. This increase might occur with points of hyperactivity at a clearly irritative lesion.

On the deficiency side, one thinks of Cannon's Law of Denervation, illustrated by the fact that both smooth and striated muscle become exquisitely sen-

sitive to normal chemical transmitting agents at the neuromuscular junctions, as well as to a variety of other chemical agents, when the muscles are removed from their nerve supply. This concept has been extended into the central nervous system, particularly by Stavraky and his co-workers,[4,15] who have shown that when certain tracts are sectioned or lesions made in certain nuclei and areas in the central nervous system, a state of hyperirritability eventually develops in the neuronal center denervated by the lesion. The hypersensitivity extends to certain chemical substances arriving via the blood stream, as well as to the remaining input of nerve impulses still being fed into that center. More recently it has been shown that deafferentation, produced by sectioning the dorsal roots or the nerves peripheral to the spinal ganglia involved, may produce certain changes (which appear to be long-lasting) in the responsiveness of the region of the central nervous system affected (see Eccles and McIntyre[5] and Teasdall and Stavraky[15]). This latter type of experimental situation, of course, closely resembles clinical nerve transections and amputations and, therefore, merits a great deal more study.

Clinical experience suggests that chronically increased sensory input may produce a kind of hyperreactive state in the patient, with unique properties and a persistence of its own. Even a brief period of moderately intense painful stimulation, such as may occur in a badly managed dental procedure, can apparently give rise to a state of persistent pain and hyperreactiveness, which Gerard (1951)[7] referred to as a kind of "inflammatory process" in the neurons of the spinal cord or brain stem. However, a certain minimum of sensory input is apparently necessary for the maintenance of this abnormal state. It has been observed that a single nerve-blocking injection of procaine at the appropriate nerve or trigger point may abolish this painful state either permanently or for days or weeks, even though the nerve-blocking action of the procaine lasts only for an hour or so. These considerations indicate that states of altered function or excitability, of a type and duration that have not yet been adequately explored by neurophysiologists, exist in central neurons. The existence of memory itself is an obvious example of one such long-lasting neuronal response.

One may add a few additional comments as to places and mechanisms in the central nervous system that may be involved in normal and abnormal pain perception. As suggested in Dr. Ralston's paper, the regions for central relay of sensory impulses arriving along amyelinated and small myelinated nerve fibers, apparently associated with pain, are different from those handling impulses arriving from the larger myelinated fiber groups. The representation of pain sensation in the forebrain, however, is still not clear. The fact that lesions in certain sites in the thalamus can give rise to the so-called thalamic pain syndrome does not in itself prove that conscious pain is represented in these regions. Indeed, since the lesions involved are usually of a degenerative rather than of an irritative character, it may be argued that pain of this type could also be due to a deficiency of sensory input. Evidence from the laboratories of Magoun, Jasper and others in the last few years strongly suggests that the state of arousal of the cerebral cortex is dependent upon the activity of the reticular formation of the brain stem.[1] Further study of this so-called centrencephalic system may throw light on the sites and mechanisms that are involved in sensory perceptions at the so-called psychological or psychiatric level. It is known, for example, that efferent influences from the brain, acting through the reticular formation, can produce an inhibition of sensory impulses as they arrive at the primary receiving nuclei in the central nervous system.[10,11] Thus, if a cat, subjected to constant clicking sounds, is suddenly confronted with a mouse, the size of the action potentials produced by the clicks as recorded at the cat's cochlear nucleus in the medulla, suddenly decreases. Such efferent, inhibitory influences on sensory relays could conceivably be an important part of the mechanism suggested earlier that may be concerned with the interaction between the effects of one type of sensory input and another. This same mechanism also may explain observed association of certain psychological and psychiatric states with drastic changes in the conscious sensory responsiveness to various sensory inputs. For example, it is conceivable that when it is suggested to a person under hypnosis that he will not feel pain, a pattern of activity is set into motion in the forebrain which inhibits the relay of sensory impulses elicited by noxious stimuli as they enter the cord from the periphery.

In conclusion, one may say that there is more than one anatomical location and more than one physiological mechanism that could be involved in the production of the persistent, deep and aching type of pain I have been discussing. In fact, it seems likely that even in the same patient more than one such factor is involved. Correspondingly, research must be advanced on a variety of physiological fronts.

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Psychologic Aspects of Pain

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PAIN, a most difficult word to define, ranges in meaning and connotations from penalty or punishment to "distressing uneasiness of mind; mental suffering; grief." Termed a specific modality of sensation, with varying responses, it is more than mere sensation; it is a signal of danger and a warning that something should be done. Perception as a function of sensory receptors varies little from person to person; while the reaction to pain, a function of higher centers, may vary greatly and among many factors, according to the subject's age, sex, temperament, culture and feeling state. The interplay of some or all these factors determines a person's psychic control of pain and explains in part the range in individual reactions. For example, a martyr entranced with visions of salvation or a soldier wounded in the turmoil of battle may feel little or no sensitivity to pain; whereas others may greatly overreact to rather moderate amounts of pain.[2]

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As a psychiatric problem pain has significance as an emotional experience. For example, Kolb[7] observed that a patient treated by prefrontal lobotomy for intractable pain no longer complains of pain and yet states, if asked, that he still has the pain; in an examination he reacts to the painful pin prick; or he may complain of pain if a distressing topic is touched on. That is, the lobotomy separates the emotional significance, the anguish or dread of future painful impressions, from the perception of the pain stimulus.

It has long been pointed out that almost all hysterical pains rise in conjunction with an organically determined painful sensation with which the patient associates a painful psychic impression. The complaint of pain becomes a symbol for an associated painful emotional state.

Pain may thus occur as an expression of emotional disturbance or a sign of anxiety. For example, the patient who cannot adequately resolve a conflict between his inner drives and his personal and cultural standards may regress to an earlier form of behavior that once gave satisfaction. The primary symptoms of the neurosis represent these immature behavior patterns. Painful symptoms in any body part may also occur as regressive phenomena.

How pain serves as a source of satisfaction can be seen in children's early experiences. In most families the young child soon learns that his cries of pain bring solicitude, and later he runs to his parents for comfort whenever he is hurt. When the child's slightest complaints are met with undue solace, he becomes conditioned to use complaints of pain to allay his anxiety and gain comfort. Or the child sees his parents' deep solicitude for a seriously ill sibling and tries by fantasied suffering to obtain the same care; as an adult he may still unconsciously seek the envied gratification by overreactions to pain.

Recent studies show another psychogenic basis for complaints of pain. Many civilian amputees who complain of phantom limb pain have had an early, close, continuing association with an amputee. The anxiety produced by fantasies about mutilation is repressed, but may be relighted by plans for surgical operation. Complaints of pain and panic may then appear after the amputation. Persons of hysterical character most often thus identify themselves with

another and unconsciously use pain to solve a dependent need or to express anxiety about fears of mutilation.

Masochistic self-punishment underlies many chronic painful conditions. It may develop in the child who secretly enjoys seeing the punishment of a sibling and then punishes himself by fantasy for his enjoyment. Or the child brought up to repress feelings of hatred may as an adult use complaints of pain to cover his hostile feelings toward an associate. In a person of rigid, perfectionistic character this guilty response is often associated with other symptoms of an obsessive compulsive neurosis or a depression.

Psychogenic pain can be complicated by drug dependency or addiction. Development of addiction adds physiologic dependency to the patient's psychologic needs as expressed in his pain symptom. He complains of pain in order to get his gratification with the drug and to prevent the painful symptoms that develop with withdrawal and abstinence.

Szasz[14,15] thus subdivided the meaning of pain: (1) Pain signals the danger of disrupted continuity of the body and loss of a body part, especially the skin or an appendage—body parts, including functions such as vision or hearing, that are cathected (charged or infused with psychic energy) as objects and can be lost or detached; and (2) pain is a reaction to and a warning against the danger of overstimulation, usually of the inner body parts. Szasz distinguished pain at three levels of symbolization. At the biologic level, pain within a one-body frame of reference signals to the ego some damage or danger to the organism's structure or functional integrity. At the second level pain concerns one or more other persons; the expression of pain, a fundamental way of asking help, needs some validation in the individual's attempt at communication. The third level centers mainly on the communicative nature of pain, which may no longer refer to the body, but may represent a request for help through a complaint about unfair treatment or an attack against a needed but unconsciously hated object.

Cooper and Braceland[2] grouped persons who complain of pain along a pain spectrum. Along one end fall those with a normal perception of and reaction to pain, a heightened reaction to pain and a psychic perpetuation of organically induced pain; along the other end are those with psychosomatic pain and with psychogenic pain. Midway lies *gestalt* pain, not readily ascribable to either organic or psychic causes; it includes the painful complaint of a phantom limb. Phantom limb pain in selected series occurs in nearly half of the cases of surgical or traumatic amputation of a limb; the persistent pain is relatively rare but usually continuous, with periodic exacerbation. Various stimuli such as touching the stump, yawning, urinating, becoming fatigued, increase the pain and make the patient apprehensive.

Four major theories are offered to explain the cause of phantom limb pain: (1) The painful peripheral sensations are ascribed to neuromas and other abnormalities in the stump; (2) persistent representation of the painful extremity in the cerebral sensory cortex, according to Pick, or the lack of orientation to the new body image after loss of a limb, according to Schilder, accounts for phantom pain; (3) on a psychogenic basis narcissistic inability to renounce the integrity of the body is described; and (4) psychiatric factors, such as severe psychopathic disturbances, are noted. Riddoch[10] emphasized the organic factors, as did Gallinek,[4] who admitted, however, the presence of cerebral and emotional mechanisms. Bailey and Moersch[1] minimized the peripheral theory and saw a strong psychogenic component in persistent pain. Ewalt, Randall, and Morris[3] found in their study of more than 2,000 army amputees that all patients who complained of phantom limb pain had considerable psychopathic disturbances. Psychiatric factors also had a role in complaints of pain by paraplegics. Men who had dominant psychopathic traits and reacted poorly to their disability tended to be more demanding and complaining than those with sound personality before the injury.

It is likely that complaints of phantom limb pain, in the absence of abnormality of the stump, stem from the patient's poor adaptability and faulty psychophysiologic inhibition of stimuli such as those giving rise to paresthesias, which are often interpreted as pain. A well-integrated, adaptive person can disregard the not overpowering peripheral stimulus.

Migraine headache, cardiospasm, and low back pain are included under psychosomatic conditions with problems of psychogenic pain. Sargent[12] found low-back pain the most common type of functional backache among troops in World War II, and ascribed psychosomatic backache to increased muscular tension arising from anxiety and nervous energy. According to Ruesch's[11] formulation of the psychodynamic base in such problems, most of the patients are dependent persons with a low tolerance and stereotyped reactions to frustrations, autonomic manifestations and poor adaptive ability. Because of arrested development at an organ level of expression, they expend energy in muscular, visceral or vascular activity rather than in interpersonal relationships. A prolonged readiness for action, the result of nervous tension, can be satisfied only by somatic discharges, and these physiologic expressions are perpetuated by emotional problems.

Because of their origin in childhood these reactions must be approached by a so-called child psychotherapy with adult patients; and disregard of the emotional component, in Strecker's[13] opinion, may lead to a persistent organic lesion that finally requires surgical operation. Cooper and Braceland[2] also emphasized the difficult clinical management of patients with a psychiatrically determined perpetuation of pain that was once organically induced. In these rigid and guilt-ridden patients the terms of pain and penalty are often emotionally linked. Pain inflicted by the superego is used to expiate unconscious guilt, or pain is displaced from the psyche to the peripheral soma—a device more tolerable to the ego.

Hart[6] noted a rather close parallelism between an ego function, like displacement, and cortical functions. The "reception, interpretation, projection of and response to pain stimuli" are chiefly functions of the cerebral cortex; hence his assumption that the displacement of guilt affect into peripheral somatic pain belongs to the cerebral cortex or the corticothalamic organization. In his observations on the psychiatric aspects of pain, Rangell[9] also pointed out the strong guilt feeling in patients with conversion hysteria, with pain the price of appeasement to the conscience. Pain in psychosomatic conditions he considers a direct result of the chemical or hormonal changes produced by tension states. Penman,[8] too, emphasized the important function that pain may serve; it may become the sufferer's chief occupation, an achievement not to be given up lightly. Again it is noted that medical relief of such severe pain, unless accompanied by early diagnosis and careful personality assessment and therapy, will only lead to another pain complex.

These psychiatric investigations underline the need for a complete examination and study, however time-consuming and costly, of a patient with chronic pain and a history of failures in treatment. The psychologic work-up of the case[5] should include the patient's chief complaint: family history and status; detailed personal history and interpersonal relationships, with their coloring of his problems; his personality make-up; the whole setting of the present illness; and a comprehensive mental examination. The physician's attitude should be one of friendliness and understanding, in his efforts to achieve a true picture of the patient.

If the diagnosis is not clear after thorough medical and psychologic study, a psychiatric consultation may be indicated, and can usually be carried out successfully. At times the psychiatrist may request further information from the referring physician; or an interview with family members; or a psychological test profile, to be made by a well-trained, experienced clinical psychologist.

In summary, clinical pain must be considered a syndrome with both psychic and somatic elements. Cooper and Braceland[2] outlined the basic considerations to be kept in mind in evaluating the problem of pain:

1. Consider any emotions that may initiate a painful state or exaggerate a patient's reaction to pain.

2. Investigate carefully the patient's milieu—marital status, socioeconomic situation and ways of reacting to stress and illness.

3. Explain adequately to the patient the interaction of psychic and somatic factors.

4. Understand that unwise probing, injecting, massaging or denervating minor defects in trying to relieve pain that is psychically perpetuated serves to fix the neurosis and lessen the chances for cure; the neurotic patient often thrives on such iatrogenic factors.

5. Realize that hostility begets hostility. Listen without anger to the patient's undue complaints and gain his confidence.

6. Perceive that reassurance helps little and at times does harm; whereas careful reeducation of the patient is almost always effective.

With these considerations, psychiatric judgment thus ranks with medical and surgical opinion in the clinical and therapeutic plans for the patient who complains of pain.

END OF PART I

Parts II and III of this symposium will appear in coming issues of CALIFORNIA MEDICINE

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Operations Upon the Aged

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• From the point of view of the surgeon, as repeatedly emphasized in the surgical literature, the mortality rate for operations upon old persons is only slightly higher for elective surgical operations than for the same operations on younger persons when proper preoperative and postoperative precautions are taken. However, the mortality rate for emergency operations is much higher in old persons than in younger ones. Many surgeons believe, therefore, that disease for which operation is otherwise indicated should be treated surgically irrespective of the age of the patient per se.

The authors' experience with operations upon old persons at the San Francisco Hospital accords with these conclusions.

In a paper titled The Aging Lung, Richards[9] recalled the story of one Thomas Parr, a man of England who was said to have lived to the age of 152 years. Old Parr, the story goes, was summoned to the court of Charles I from his home in Shropshire as a curiosity for the king to see. He was appropriately wined and dined, and promptly died. Whereupon the king ordered his personal physician—William Harvey, none other—to perform an autopsy on the body. Dr. Harvey pronounced all the organs of the late Thomas Parr to be normal and sound. No anatomical cause of death was discovered, and old Parr was said at last to have died of "a surfeit," a diagnosis as satisfying to the clinician as many of the diagnoses returned by pathologists even today.

In our time, with the number of aged persons in the population increasing apace, clinicians quite commonly observe normal viscera in the elderly. Groom[3] noted that although the increase in population of the United States between 1930 and 1940 was only 11 per cent, the number of people between the ages of 65 and 74 years had increased by 35 per cent. Moreover, United States census data supported a conclusion that if a person reaches the age of 60 years, his life expectancy is 76. Ziffren[10] estimated that in 1953 there were 12,269,537 men and women over the age of 65 years in this country.

The general surgical experience with patients of this older age group is well exemplified by the report of Haug and Dale,[4] who found that the over-all mortality rate so far as elective procedures was concerned was approximately 5.4 per cent, and for emergency procedures in the same group the mortality rate was 21.9 per cent.

In light of data of this kind, it is somewhat disconcerting for surgeons to have internists advise against surgical therapy for old patients simply because they are old. It is the purpose of this presentation to report surgical mortality experience with the difficult clinical material on the ward service of the San Francisco Hospital quite similar to that reported by Haug and Dale. For the purposes of this report, the record of every patient who entered the male surgical ward on the Stanford University Service from May 1953 to May 1955 was studied.

From the Stanford University Surgical Service at the San Francisco City and County Hospital, a unit of the Department of Public Health, San Francisco.

Submitted July 23, 1956.

Neurological, urological, eye and fracture problems were not included. That this unit is representative of the hospital population as a whole is demonstrated by the fact that the ratio of patients over 65 years to the total entries for the fiscal year 1954-1955 was 3,718:19,467, while the ratio for the unit under study for the two-year period was 330:1,974—both roughly 1:6.

In Table 1 the age distribution of the patients by five-year grouping is shown. Table 2 lists the types of operations performed in each group. Table 3 shows sample mortality rates associated with various procedures. Table 4 compares the mortality rate in emergency procedures with that in elective operations.

Preparation of aged patients for operation is most important. Obviously, restoration of fluid balance where loss has been incurred by vomiting or diarrhea is routine. In general, it is preferable to have elderly patients underhydrated rather than overhydrated, since they are prone to pulmonary edema if a cardiac or renal lesion is present. Perhaps the most important of the hidden deficiences in the aged is an insufficient amount of blood, as has been stressed by Cole,[2] Beling,[1] and others. Since shortage of blood cannot be reliably diagnosed otherwise, blood volume determinations should be carried out. Adequate transfusion should be an integral part of operative preparation.

Richards[9] pointed out that the pulmonary reserve as far as the lung itself is concerned is not impaired too seriously unless there is obvious pulmonary disease present. He noted that fixation of bones of the

TABLE 1.—*Distribution of Age Groups Over 70 Years of Age, Male General Surgical Ward, San Francisco Hospital, May 1953-1955*

Years	Number of Patients
70 to 75	192
75 to 80	62
80 to 85	50
85 to 90	22
90	4
Total	330

(Total number of admissions for this period, 1,974)

TABLE 2.—*Types of Operations on Patients Over 70 Years of Age, Male General Surgical Ward, San Francisco Hospital, May 1953-1955*

	Number of Operations
Gastric resection	19
Appendectomy	3
Herniorrhaphy	65
Amputation	22
Hemorrhoidectomy	3
Sympathectomy	7
Relief of bowel obstruction	9
Colon resection	7
Repair of perforated viscus	9
Cholecystectomy	11
Exploratory laparotomy	6
Thoracotomy	5
Esophagectomy	1
Colostomy	3
Whipple	1
Choledochostomy	1
Cecostomy	3
Neck dissections	6
Miscellaneous	14
Total operations	195

TABLE 3.—*Sample Mortality Rates in Relation to Type of Procedure, Male General Surgical Ward, San Francisco Hospital, Patients Over 70 Years of Age, May 1953-1955*

Operation	Number	Deaths	Per Cent
Gastric resection	19	2	10
Herniorrhaphy—elective	59	0	....
Herniorrhaphy—emergency	6	1	16
Amputations	22	6	27

TABLE 4.—*Comparison Death Rate in Emergency and in Elective Operations, Patients Over 70 Years of Age, in 85 Major Surgical Operations, Male General Surgical Ward, San Francisco Hospital, May 1953-1955*

Type of Operation	Number	Deaths	Per Cent
Emergency	22	5	23
Elective	63	2	4

chest wall is a much more dangerous factor in preventing adequate ventilation and expectoration than the so-called emphysematous changes in the lungs. Because fixation of the chest wall is so common in the aged, the authors do not hesitate to perform tracheotomy as the last step in the operation in every case in which the lungs are wet, as was recommended by Johnston and co-workers.[6] This is always valuable in thoracotomy and often in upper abdominal operations.

Oxygen is administered routinely postoperatively until the patient is fully conscious and as long as there is any suggestion of cyanosis.

Pulmonary aspiration of gastric contents is not uncommon in the aged. Therefore gastric aspiration preoperatively and close and constant attention postoperatively until the patient is fully conscious are recommended. Gastrostomy for this purpose will help prevent pulmonary complications.

In the present series, local and epidural anesthesia was used whenever possible.

Cole[2] said that in some cases corticotropin (ACTH) and cortisone can make an inoperable patient operable by increasing appetite, eliminating fever and bringing about a sense of well-being. Cole gave 100 mg. of corticotropin for five to six days preoperatively. The authors have not had much experience in the use of hormones preoperatively but have been impressed with the effect when used postoperatively in aged patients who appear to react poorly to the operation.

In the belief that in general for aged patients the shortest possible time at surgery is best, the authors use staged procedures for old persons when possible.

DISCUSSION

The experience here reported appears to accord with that reported in the surgical literature: After proper preparation aged patients stand major surgical operation with only a slightly greater risk than younger patients.[8] It therefore would seem proper to recommend elective surgical treatment of disease within the surgeon's province when the mortality rate is low rather than wait until, say, the hernia strangulates or the gallbladder disease becomes acute or gallstones pass into the common duct or bowel.

The contraindications to operation upon the aged are the same as those for younger persons, but they are more likely to be present and often are more difficult to relieve. Very frequently an aged patient who, by emergency surgical intervention, has been relieved of an acute condition which has arisen out of a chronic disease, asks, "Why was it not possible to have undertaken this operation years ago?" The authors believe that the operation *was* possible within an acceptable limit of risk in most such cases and should have been undertaken as an elective procedure, provided definite contraindications other than the age of the patient were not present. The hazards of emergency operation in the aged have to do mainly with coexisting systemic diseases, which might be corrected beforehand under conditions of

elective operation. Those chronic conditions, therefore, that are likely to lead to acute surgical emergencies, should be given even more serious consideration in the aged than in younger persons. Anticipation of the real dangers of an acute exacerbation of a chronic surgical disease in the aged has become an important part of the consideration for elective operation.

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As your personal physician I consider it both a privilege and a matter of duty to be available in case of an emergency. But, being only human you can understand that there are times when I may not be on call. I might be at a medical meeting outside the city, on a bit of a vacation—or even ill.

Consequently, I thought it would be a good precaution if—on this gummed paper which you can paste in your telephone book or in your medicine cabinet—I listed numbers where I can be reached at all times. Also, the number of a capable associate as an added service. Here they are:

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_____	_____	_____
OFFICE	HOME	ASSOCIATE

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Infantile Diarrhea

Tolerance to Solutions of Electrolytes by Mouth

ANTON J. DeFEDE, *M.D.*, JOHN R. ALMKLOV, *M.D.*, and RICHARD V. POLSON, *M.D.*, Bakersfield

• **Since Darrow's recommendation of electrolyte administration by mouth to infants with diarrhea, the constituting of a palatable liquid has been in the minds of all persons concerned with the treatment of diarrhea. Owing to the frequent association of gastric distress with oral administration of electrolyte solution, presumably because of increased osmolarity, a study was made at Kern County General Hospital to determine what osmolarity of solution was tolerated by most infants. For this purpose a commercially prepared oral electrolyte solution was used. When this new solution was given undiluted—that is, at an osmolarity of 20 times that of physiologic solution—only one of 29 patients, who were acutely ill and dehydrated, refused it or vomited it, probably due to irritation of the gastric mucosa. However, at a dilution of 1:3 with 5 per cent glucose and an osmolarity of six times physiological, only one of the 29 infants vomited and two others occasionally refused it.**

The length of hospital stay was not shortened by the substitution of the commercial preparation in either dilution. However, since the babies readily drank this electrolyte solution, it was possible to stop parenteral administration of electrolytes once fluid replacement had been carried out when the patient was first admitted.

Owing to the classic observations of Darrow[1] who in 1946 demonstrated the importance of potassium replacement in the treatment of diarrhea in infants, the mortality in this condition can now be greatly reduced. Replacement of this ion as well as of sodium,[3] chloride and calcium[5] is necessary in the restoration of the disturbed electrolyte metabolism in diarrheal states.

As so often happens, the administration of potassium salts at first was viewed with some apprehension by many physicians, which was quite understandable in light of the previous widespread teaching concerning the toxic effects of potassium, particularly on the cardiac muscle and especially when given intravenously. Fortunately, however, Darrow and others made carefully controlled studies and outlined a regimen for the safe administration of potassium salts in infants with diarrhea. They recommended that, when tolerated, electrolyte solutions be given orally. A great variety of fluid-and-electrolyte solutions for oral use, made up by pharmacists or mixed at home according to a physician's prescription, has come into use. This is a real advance in therapy since the early use of electrolytes by mouth may obviate the need for intravenous therapy and may considerably lower the hospitalization rate of infants with diarrhea. However, there has been a tendency on the part of physicians to forget that salt solutions can be irritating to the gastrointestinal tract of an infant. Apparently some of the formulas are too concentrated. Hansen and Giffs[4] said that if they gave Darrow's solution by oral route in a stronger mixture than one part of Darrow's to two parts of 5 per cent glucose, the patients had gastric distress and vomiting. With the recent advent of commercially prepared electrolyte solutions for oral administration, it is timely to evaluate the factor of concentration as it affects tolerance by the infant.

PLAN OF STUDY

The patients observed in this study were infants in Kern County General Hospital who had diarrhea and were moderately to severely dehydrated. At the hospital the medical needs of the indigent in a total population of approximately 250,000 are cared for. Kern County, located in the southernmost end of the San Joaquin Valley in central California, has a climate that is semi-arid with daily temperatures commonly over 100°F. throughout the spring, summer and autumn months. It is primarily an agricultural area. Many thousands of migratory farm laborers, traveling with their families, are employed. Their living conditions usually are poor; houses are frequently overcrowded and makeshift dwellings are common. Infantile diarrhea has every opportunity to become a major problem.

Although the Kern County mortality rate for diarrhea has decreased as it has for the nation as a whole, it is still three times greater than the national average. In 1930 the mortality rate (per 100,000 people) was 51.3 for the county compared with the national rate of 19.4; in 1948, 19.0 compared to 4.7. The total yearly admissions for infantile diarrhea to Kern County General Hospital have

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Submitted August 2, 1956.

TABLE I.—*Tolerance for Oral Electrolyte Preparation* in Infantile Diarrhea*

Patient	Age (Months)	Sex	Polysal Full Strength	Polysal Diluted	Reaction
1	4	F	X	X	Took well and no vomiting
2	3	F	X	....	Vomited
			....	X	Took moderately well and no vomiting
3	6	F	X	....	Vomited
			....	X	Took well and no vomiting
4	2	M	X	....	Vomited every other time
			....	X	Fairly well taken and no vomiting
5	5	F	X	X	Refused or vomited when taken
6	12	F	X	X	Refused at first; took well after being hydrated
7	4	M	X	....	Vomited
			....	X	Took well; no vomiting
8	4	M	X	....	Vomited
			....	X	Took well and no vomiting
9	7	M	X	....	Refused or vomited
			....	X	Took moderately well and no vomiting
10	11	F	X	....	Vomited
			....	X	Took well and no vomiting
11	7	M	....	X	Took well and no vomiting
12	18	M	....	X	Refused part of time; no vomiting
13	4	F	....	X	Took well and no vomiting
14	5	M	....	X	Took well and no vomiting
15	2	M	....	X	Took well and no vomiting
16	3	F	....	X	Took well and no vomiting
17	5	F	....	X	Refused most of time; no vomiting
18	9	M	....	X	Took well and no vomiting
19	8	F	....	X	Took well but vomited part of time
20	7	M	....	X	Took well and no vomiting
21	3	M	....	X	Took fairly well and no vomiting
22	12	F	....	X	Took well and no vomiting
23	5	F	....	X	Refused or vomited
24	6	F	....	X	Took well and no vomiting
25	6	M	....	X	Took well and no vomiting
26	9	F	....	X	Took well and no vomiting
27	8	M	....	X	Took well and no vomiting
28	4	M	....	X	Took well and slight spitting up
29	7	M	....	X	Took well and no vomiting

* Polysal.
Note: Polysal dilution 1:3 with 5 per cent glucose and water.

not decreased correspondingly. Since 1948 the number of infants admitted annually for severe diarrhea has been between 275 and 400. They were ill and severely dehydrated.

THERAPEUTIC REGIMEN

The stools of all patients admitted because of diarrhea were cultured on three consecutive days.

A plan of treatment similar to the recommendations of Darrow[2] was adopted. In outline form this treatment was as follows:

A. Fluid Administration

1. *Shock.* If the patient is in shock or a shock-like state (cyanosis, poor skin turgor, weak cry, responds poorly to painful stimulation), whole blood or plasma is immediately given intravenously (20 to 30 cc. per kilogram of body weight) along with an equal volume of physiological saline solution. In severe cases this is given rapidly. In mild cases in which blood or plasma is not indicated, intravenous therapy is begun with physiological saline solution.

2. *Subsequent fluid and electrolyte administration.* Following the initial intravenous therapy, a solution of potassium chloride-sodium chloride-sodium lactate (Darrow's) is given intravenously or subcutaneously, 80 to 100 cc. per kilogram of body weight. It is given slowly by drip over four to eight hours.

As a precautionary measure, before the administration of potassium-containing fluid it was definitely established that there had been urine formation, especially in the case of patients in shock.

The total daily fluid requirement was calculated to be 150 to 250 cc., or even more per kilogram of body weight. After the initial administration of fluid, additional salt-containing solutions were given. For severely dehydrated infants this was made to total approximately 100 cc. per kilogram of body weight. The balance of the day's fluid requirements was made up of 5 per cent glucose in water.

3. *Oral administration of fluids and electrolytes.*

As soon as fluids could be tolerated orally, the following solution (Polysal Elixir*) was used:

	Gm. per 100 cc.
Sodium chloride U.S.P.	3.33
Potassium chloride U.S.P.	2.22
Calcium lactate NF	0.553
Magnesium gluconate $2H_2O$	0.50
Sodium lactate, anhydrous	5.0

4. *Serum electrolyte studies.* Usually on the second day, especially if the infant did not seem to be responding well, determinations of the bicarbonate, chloride, sodium and potassium content of the serum were made in order to guide subsequent therapy.

B. Meeting Food Requirements

First, all food by mouth was omitted until vomiting had ceased and dehydration corrected, which usually occurred within 24 hours. Then at first 5 per cent glucose solution was given, followed by the previously described oral electrolyte formula. With retention of glucose solution a powdered milk formula composed of fat 1.5 per cent, protein 4.6 per cent and carbohydrates 3.8 per cent was given by diluting one tablespoonful of dried powdered milk to three ounces of water.

At eight-hour intervals the patient's status regarding intake of fluid and electrolytes was reviewed. If necessary, fluids or electrolytes were given parenterally if they had not been taken orally.

TEST GROUP

In the group of 29 patients selected for the study of tolerance for concentrations of electrolytes, 17 (58 per cent) were six months of age or younger. All the patients were under one year of age except for one 18-month old infant. All were treated according to the treatment schedule previously outlined.

Tonicity of Administered Solution

The manufacturer of the oral electrolyte solution which was used in this study recommends a dilution of 0.5 cc. to 1 ounce of water or other nonelectrolyte fluid for each 10 pounds (4.5 kg.) of body weight every 2 to 3 hours. According to Beniams† the above dilution causes a depression of freezing point to —0.83°C. Physiological saline solution (Cutter) has a freezing point of —0.56°C. Therefore, the tonicity of the recommended dilution is 1.4 times physiological (0.83:0.56).

However, the study was not concerned with the ability of infants to tolerate a solution orally which was, for practical purposes, isotonic. Instead, two stronger solutions were tested, one undiluted and the other diluted 1:3 with 5 per cent glucose and water. Undiluted, this solution freezes at —11.3°C. So the undiluted solution is about twenty times as osmotically active as normal saline (11.3:0.56). At a dilution of 1:3 with 5 per cent glucose in water, the freezing point is —3.4°C., and the tonicity is 6 times physiological (3.4:0.56). Thus the solutions tested were, respectively, 20 times and 6 times as osmotically active as plasma.

The first ten patients were given 6 teaspoonfuls of the concentrated oral electrolyte three times daily. The other patients were given the same solution diluted 1:3 with the glucose solution.

RESULTS

Tolerance of electrolyte solution. Data concerning acceptance and tolerance of the preparation are summarized in Table 1. Only two of the ten patients were able to retain the concentrated (*i.e.*, times 20 isotonic). The remaining eight refused it or vomited it. Presumably the hyperosmolarity of the undiluted solution was irritating to the gastric mucosa. The solution was thereafter diluted one part of Polysal to three parts of 5 per cent glucose in water (*i.e.*, 6 times physiological). When this diluted solution was given to the original ten patients who had previously received the concentrated solution, only one vomited. Of the subsequent 19 patients who received diluted Polysal, only one refused it. Two other patients in this group refused the preparation occasionally, but no vomiting occurred once it had been ingested (See Table 1).

The nurses caring for these patients were pleased by the eager manner in which the patients took this liquid.

Effect on hospital stay. The duration of hospitalization of these subjects was comparable with that of the usual regimen for such patients in this hospital, the average being 21 days.

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* The authors are grateful to Dr. Edwin B. McLean, director of clinical investigation, Cutter Laboratories, Berkeley, California, for the generous supply of the oral electrolyte solution, Polysal Elixir, used in this study.

† Personal communication. Herman N. Beniams, Ph.D., Director, Department of Biophysical Research, Cutter Laboratories, Berkeley, California.

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The Carcinolytic Effect of Actinomycin C

A Report of Clinical Studies

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• Actinomycin C was administered to 35 patients with a variety of malignant states. There was no evidence of any toxic reaction.

Of 11 patients with Hodgkins disease, four had brief objective remission ranging from two to four months. Individual patients with chronic myelogenous leukemia, multiple myeloma and neuroblastoma had short periods of clinical improvement.

The usefulness of actinomycin C appears to be limited. It may best be used in instances of Hodgkin's disease where pancytopenia prevents the use of other agents.

In 1941, Waksman isolated an antibiotic from actinomycetes which appeared to have a selective cytotoxic effect upon the spleen and lymphatic system. The actinomycin was extremely toxic to animal hosts and further studies were halted. Subsequently the anticarcinogenic activity of the actinomycetes was reevaluated by a group of German investigators who isolated a crystalline antibiotic termed actinomycin C from a filtrate of *Streptomyces chrysomallus* cultures.[5-7] This material had pronounced inhibitory effect on tumors in experimental animals and was reported to have beneficial effect in a series of patients with neoplastic states of the lymphatic system, notably Hodgkin's disease.[7,8]

The author and co-workers had previously reported that actinomycin C induced a significant and reproducible inhibition of several kinds of mouse tumors, sarcoma 180 and the RC carcinoma, as well as prolonging the life of mice with leukemia L 4946.* In a preliminary manner, a limited report of clinical experiences also was given previously. In the absence of other objective evaluation from American sources, it is the purpose of this report to give a summary of the clinical trials of actinomycin C.*

METHOD OF ADMINISTRATION

The regimen designed by Schulte,[7,8] was followed in these trials. Daily injections of 200 gamma of antibiotic (provided as 100 mg. of dry material) were given intravenously for 25 days. However, several variations of this routine were also used without noticeable difference in the results. Some patients received the drug daily or five times a week for as many as 60 injections, others received 400 gamma daily for about 25 injections; finally eight-hour drip infusions of 200 to 600 gamma of the antibiotic in light-protected saline solutions were also given. In several instances mild nausea, and rarely some emesis, occurred soon after administration of the drug. Usually this reaction subsided after the first week of therapy. Dosage was approximately as stated despite a wide range of age and weight in patients selected.

Evidence of extensive hepatic disturbance and necrosis was elicited in the animal studies[4] but none was apparent in the clinical trials in the doses used. It should be noted that the equivalent of the average of antibiotic dose daily (100 gamma per kilogram of body weight) that induced both a significant inhibition of sarcoma 180 and some hepatic disorganization in mice, would be 7,000 gamma for a human weighing 70 kilograms (or approximately 35 times the average human dose used in these trials). Many patients with advanced disease had hepatomegaly from apparent or proved tumor involvement. Careful liver function studies done during the course of actinomycin C therapy showed no deterioration beyond that predictable from tumor progression.

Examination of peripheral blood was done at least once weekly, frequently two and three times weekly. Bone marrow aspiration was done in many instances. In no case did therapy with actinomycin C induce leukopenia, anemia or thrombocytopenia: in fact, therapy was initiated in many instances of hypoplastic and hypofunctioning bone marrow without causing further deterioration.

PATIENTS TREATED

Because the effects of therapy could not be evaluated unless a substantial amount of drug had been administered, it appeared that a minimum period of observation of ten days from the beginning of ther-

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*In supplementary tests it was found that at a level of 150 gamma per kilogram of body weight per day, actinomycin C produced an approximate 25 per cent reduction of growth of the Harding-Passey Melanoma (Field, J. B., Costa, F., and Boryczka, A.—Unpublished data).

TABLE 1.—*Summary of Clinical Studies of Treatment with Actinomycin C*

Disease	No. Patients	Results of Therapy: Observation Less than 10 Days	Objective Improvement*	No Improvement
Hodgkin's disease	14	3	4	7
Lymphosarcoma	3	0	0	3
Acute leukemia	2	0	1†	1
Chronic lymphatic leukemia	3	0	0	3
Chronic myelogenous leukemia	1	0	1	0
Lympholeukosarcoma	1	1	0	0
Chronic reticuloendothelial leukemia	1	0	0	1
Multiple myeloma	1	0	1	0
Carcinoma, ovary	2	0	0	2
Adenocarcinoma, stomach	1	0	0	1
Adenocarcinoma, colon	1	0	0	1
Malignant melanoma	4	0	0	4
Neuroblastoma	1	0	1	0

*Longer than six weeks.

†Therapy for only 12 days. Transferred to another institution; bone marrow aspiration consistent with altered state of disease; however, follow-up not adequate.

apy would be necessary to make an objective recording of results. Patients with a variety of neoplasms were given actinomycin C either when the drug appeared indicated or when no further specific therapy could be offered. Most patients had advanced disease, and some of them were in the terminal stage and did not live for ten days of therapy. A summary of the objective observations is given in Table 1.

Objective changes such as alterations in size of palpable nodes, hepatosplenomegaly, or hilar adenopathy or pulmonary infiltrations as seen on x-ray films of the chest, and on the disappearance of fever, of pruritus and of night sweats, and changes in peripheral blood elements were the basis for evaluating effects in patients with malignant lymphomas. In patients with other tumors, the criteria were changes of visible or palpable tumor masses, abnormalities in x-ray films, the presence of ascites and other such objective evidence. In all cases the diagnosis was founded on an operative or biopsy specimen, and in a number of instances biopsy specimens were examined during or at the conclusion of therapy. The studies of cases of Hodgkin's disease were the only ones considered of sufficient interest to report in detail.

Of 14 patients with Hodgkin's disease, three who were in a far advanced stage died in less than ten days, leaving 11 for evaluation. They were of both sexes and the age range was from 9 to 56 years. Five patients received a course of actinomycin C as the initial and only therapy; only two of them obtained significant improvement. Of the nine other

Figure 1 (Case 1).—*Left:* Untreated Hodgkin's disease. *Right:* After treatment with actinomycin C—45 daily injections of 200 gamma each.

patients, who had advanced disease and who had been previously treated, only two could be considered as obtaining a remission from actinomycin C. Only one of each category, previously untreated and previously treated, had a remission that persisted for more than two months. A summary of four "improved" selected cases follows:

CASE 1. A 28-year-old man had progressive swelling of the left side of the neck over a period of five weeks, with pruritus and occasional low-grade fever. Biopsy of a cervical node showed Hodgkin's disease. Some hilar adenopathy was observed in an x-ray film. At the beginning of therapy the circumference of the neck was 38.75 cm. (Figure 1) and the structure of a biopsy specimen was typical of Hodgkin's disease (Figure 2). After five weeks of therapy (25 doses of 200 gamma antibiotic per day) there was considerable reduction in the size of the palpable nodes and the circumference of the neck was 37.7 cm. Actinomycin C was continued as before for a total of 45 injections. When therapy was discontinued, there were very small discrete residual nodes in the neck and the circumference of the neck was 36.8 cm. (Figure 1). Considerable necrosis and fibrosis was observed in an excised node (Figure 2). Within three weeks of discontinuance of therapy generalized explosive exacerbation of the disease occurred. The body temperature was 105°F. Hepatomegaly, adenopathy, jaundice and anemia were noted. Marrow aspiration showed diffuse and focal granulomatous lesions. A course of nitrogen mustards given intravenously brought about rapid and nearly complete remission.

CASE 2. The patient, a woman 33 years of age, had had biopsy of cervical nodes in September, 1953, showing Hodgkin's disease. Near-radical neck dissection was carried out and 28 involved nodes were removed. In May, 1954, enlargement of additional nodes was noted. Fever also began at that time and it continued despite therapy with a variety of antibiotics. In August, 1954, the patient received (elsewhere) 25 daily injections of actinomycin C, whereupon fever immediately abated and symptomatic improvement was noted. The enlargement of nodes regressed but did not disappear. A node biopsy done shortly after the beginning of therapy was said to

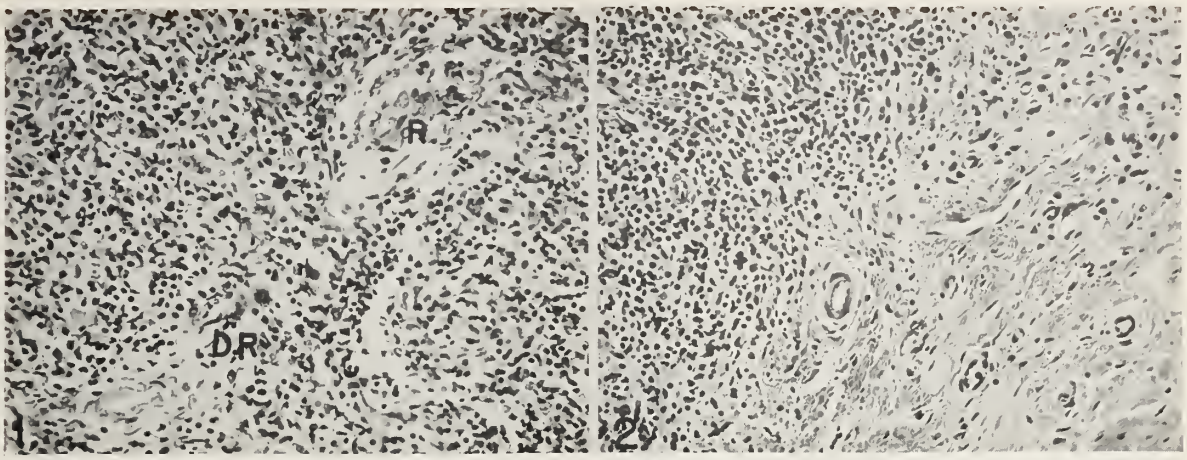

Figure 2 (Case 1).—*Left:* Lymph node biopsy before treatment. Note the proliferation of the reticular cells. Many of their nuclei are indented or polymorphic in appearance. Two Dorothy Reed cells are observed in the field. *Right:* Lymph node biopsy after actinomycin C therapy. Note disappearance of reticular cells and fibrosis of the node.

have shown changes suggestive of "improvement." The patient remained afebrile and otherwise well until about January, 1955, when she had recurrence of intermittent fever to 103°F., night sweats, anorexia, malaise, arthralgia and slight enlargement of additional nodes in the neck besides the persisting enlargement of those previously affected. The hemoglobin value was 80 per cent. Leukocytes numbered 5,000 per cu. mm. (The count had ranged from 3,000 to 5,000 in the previous four months.) A second course of actinomycin C was given and almost immediately there was reduction of fever, disappearance of the subjective complaints, weight gain of 6 pounds in two months and abatement of swelling of several of the more recently affected smaller nodes. Actinomycin was given less continuously, being reduced from once daily to twice weekly over a period of several months. During this time the leukocyte content fluctuated from 3,200 to 7,600 per cu. mm. of blood and the hemoglobin value increased to 100 per cent. Actinomycin was discontinued in early May, 1955, when it was felt a complete remission had occurred. The patient had received 57 injections in 14 weeks. However, within three weeks fever and the previous complaints recurred and the spleen was palpable for the first time. Leukocytes numbered 2,200 per cu. mm.

Daily administration of actinomycin was started again. Although splenomegaly disappeared within a week, fever continued, the hemoglobin value decreased and x-ray films showed some hilar swelling. After 2 weeks actinomycin was discontinued, treatment with triethylene melamine and prednisone was begun and improvement was noted. However, despite x-irradiation and massive doses of corticosteroids, fever continued, the temperature rising eventually to 106°F. and the patient died in October, 1955. Autopsy confirmed the diagnosis of Hodgkin's disease.

Case 3. A 42-year-old man with a history of three years of progressive biopsy-proved Hodgkin's disease. He had become less responsive to multiple transfusions and combination therapy with triethylene melamine and x-irradiation. Although receiving cortisone, 100 mg. daily, he complained increasingly of abdominal cramping pains, had diarrheal bowel movements three times daily and fever to 102°F. Para-aortic nodes on both sides were readily felt on abdominal examination and nodes were also felt on rectal examination. An x-ray film of the chest showed a widened mediastinum and a nodular infiltration in both the left upper and lower lobes. A course of 25 injections of actinomycin C was given to supplement the cortisone. In about ten days the patient became afebrile, subjective complaints stopped, the abdominal nodes were no longer palpable and an x-ray film of the chest two weeks after the conclusion of therapy showed clearing of the infiltration and reduction of the mediastinal swelling. With cortisone therapy continued, the patient was well for two months. The previous complaints then recurred.

Case 4. The patient was a man 31 years of age who had biopsy-proved Hodgkin's disease of nine years' duration. He had been treated repeatedly with x-irradiation and nitrogen mustards. The last treatment had been irradiation to the spleen and inguinal nodes two months before. Since then the patient had had severe night sweats, easy fatigue, nausea, coughing and a 13 pounds decrease in weight. Upon examination, nodes about 1 cm. in diameter were felt in the right cervical chain and the spleen was palpated five inches below the costal margin. Hilar prominences were observed in an x-ray film of the chest. The patient requested actinomycin C therapy. He received 200 gamma daily and relief of cough and night sweats occurred almost immediately. The nausea cleared after about two weeks and the cervical nodes and the spleen were not palpable. After 25 injections of the antibiotic, therapy was stopped and the patient was well for three weeks. Body weight increased 5 pounds. A reduction of hilar swelling was noted in x-ray films. Symptoms then recurred

and increased in severity. Cervical nodes again were palpable. Actinomycin C, 400 gamma one day and 200 gamma the next, was given for six of every seven days: and after two weeks the patient again had mild subjective improvement. However, despite continued therapy the body weight decreased again (9 pounds in two weeks); and with progression of signs of an active disease state, actinomycin was discontinued after 40 injections.

DISCUSSION

In the present limited investigation, the therapeutic regimen of Schulte[7,8] was followed in general but the results observed did not seem to support a conclusion that actinomycin C might be considered at the level of effectiveness of other chemotherapeutic agents of the nitrogen mustard category in the control of Hodgkin's disease.

Of 11 patients with Hodgkin's disease, only four had objective improvement with actinomycin C, and usually this was of fairly brief duration. Of nine other patients with lymphosarcoma or chronic leukemia, only one had a remission—brief and partial.

That an objective improvement was obtained in one patient with multiple myeloma suggests that further trials with actinomycin C in this disease state are indicated. The temporary remission in one case of metastatic neuroblastoma resembled but was less impressive than remissions obtained with amino-an-fol and triethylene melamine for more than 18 months in the same patient. That no objective improvement was observed in patients with carcinoma of the stomach, colon or ovary, or with malignant melanoma, of course, does not imply that actinomycin C may not be of benefit in other types of malignant growth. However, there does not appear to be sufficient evidence at present to merit an expanded investigation.

Since the administration of actinomycin C was relatively innocuous—it could be given even to patients with pronounced leukopenia and anemia—it would appear that actinomycin C might deserve consideration as a chemotherapeutic aid primarily in instances of Hodgkin's disease where hypoplastic marrow function and leukopenia bar the use of other agents which would further impair the bone marrow. In addition the clinical results should encourage the development of new actinomycins which conceivably may have greater antineoplastic effect. Already, studies with actinomycin D[1,2] have advanced to the clinical stages and it is reported that the drug has produced temporary changes in children with Hodgkin's disease, rhabdomyosarcoma and Wilms' tumor but not with acute leukemia. Actinomycin D is an effective antineoplastic agent in mice bearing transplantable tumors[1] and it appears to be about as qualitatively effective as actinomycin C when tested against sarcoma 180 and the RC carcinoma.[3]

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Mental Health

A Discussion of Various Program Approaches Used in California and the Basic Assumptions Involved

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• The nation's Number One health problem, mental illness, compels careful reevaluation of past and current methods of attack. It also invites consideration of the ways and means of integrating preventive measures that emphasize the conservation of mental health with prophylactic efforts that stress the avoidance of mental illnesses.

A review of the development of both local and statewide mental health programs in California reveals that three fundamentally different approaches have been used: (1) The traditional approach which confines itself to the protection of society from the "insane" by the state, and to the treatment of those who are not legally insane through "private enterprise"; (2) the public health approach which seeks to minimize the causes and/or spread of selected types of psychiatric disorder regarded as mass phenomena; and (3) the sociological approach which stresses the importance of social factors both in the causation and in the rehabilitation of those mental conditions that are considered to be symptomatic of a "sick" society.

An approach that combines the theoretical and practical implications of all three viewpoints offers some new solutions to the problems of (1) fitting mental health programs to populations; (2) financing; and (3) balancing preventive and clinical services.

Mental illness is not a single disease-entity but a long list of distinctly different conditions. The causes and manifestations are multiple. Biological, psychological and social components in either mental health or mental illness cannot be dissociated in any attempt to understand and deal with so wide a range of illnesses and states of comparative health. Therefore, many professions and multiple public and private agencies are involved in planning, developing and administering a mental health program.

In California as in other parts of the United States, mental illness in all its manifestations constitutes the most serious public health problem. The discussion to follow is based upon experiences in this state, and is prompted by the urgent and unmet needs for preventive, therapeutic and rehabilitative services. For example, during the first quarter of last year, 44 different communities appealed to the Department of Mental Hygiene for help in establishing local mental health services. There were 30 applications for federal grant-in-aid funds totaling $322,887 needed to supplement local public or private funds for such mental health services as outpatient psychiatric departments attached to hospitals, child guidance clinics, psychiatric consultation for schools, mental health institutes, family casework services, mental health programs in health departments, day care programs for mentally retarded, brain-damaged or emotionally disturbed children and a mental health survey of a metropolitan area with a population of five and a half million. Of the 44 communities that sought help to set up local services, 30 had never before requested help or made known their local needs for services. The sizes of these communities ranged from a city of five thousand to a county or area with a population of over five hundred thousand.

One out of 200 of the population of California was in a hospital last year for mental illness or mental retardation, and it is estimated that every fifth family was affected. The state is now spending $5.60 per capita of the population to operate its mental hospitals. Only 1 per cent of the state budget however, is allocated to mental hygiene clinics and other preventive services. Growing public demands, the size and costliness of the problem of mental illness, and increasing knowledge of methods of attack all compel a reevaluation of mental health programs and the basic assumptions involved.

DIFFERENT APPROACHES USED IN CALIFORNIA

The traditional approach in California has meant a public, institutional type of custodial care for patients so greatly retarded or so severely mentally ill they could no longer stay in the community. General hospitals refused to take these patients at any stage of illness, partly because of the high costs of treatment. In northern California, 14 years ago, only one general hospital, a university teaching

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hospital, accepted psychiatric patients for treatment. Cost of psychiatric treatment, unlike that for other therapies, is not covered, or is barely covered in a few instances, by prepaid hospital and medical care insurance plans. A survey in 1952 showed that a fourth of Blue Cross and fewer of Blue Shield plans allowed a few days' psychiatric care "in the life of the patient." County hospitals have for the most part served as detention quarters for psychiatric patients until they could be committed; often jails had to perform the service. Even now, only two county hospitals offer psychiatric treatment.

As a result, patients in the acute or earlier stages had no chance for active treatment, and the more hopeless cases jammed the state mental hospitals. Twelve years ago, California's seven mental hospitals had 25,000 resident patients, and the number discharged as recovered or improved was far less than the number of total new admissions. Only 2 per cent of the newly admitted patients were self-committed. The state had no more than six privately supported psychiatric outpatient clinics and only four child guidance centers. There was only one state hospital for the mentally retarded, and it was used for severe cases; patients on the outside had no special training or supervision.

The traditional approach now provides for public mental hospital care of 91 per cent of the mentally ill and retarded in severe or advanced cases, often when improvement is unlikely; but private hospitalization is available for only 9 per cent of such patients, due to the high costs involved, the general unavailability of sickness insurance for psychiatric disorders and the prejudice against psychiatric facilities in general hospitals. There is still consequent widespread neglect of mental illnesses in the earlier, more treatable stages. This approach essentially provides methods of dealing with large aggregations of advanced cases, and it is based on the following assumptions: (1) The state is responsible principally for the care of the "insane" and for the protection of society; (2) there is federal responsibility for the care of service-connected psychiatric disorders in war veterans; and (3) it is the responsibility of "private enterprise" to supply all other mental health services to individual patients.

State and local public health programs have largely focused on preventing certain psychiatric disorders for which definite causes could be found and which lent themselves to mass handling. Inoculation against diseases with brain-damaging sequelae, maternal and child care programs, health education and many other public health measures have reduced the incidence and spread of both congenital and acquired mental illnesses and deficiencies. For the most part, these efforts have not been adopted with the conscious purpose of preventing psychiatric disorders, by either public health officials or the medical profession. The consequent lengthening of life has in fact resulted in an increased incidence of the senile psychoses.

The public health approach comprises prevention of mental illnesses and deficiencies through reduction or elimination of the causes, through intervention in the spread of psychiatric disorders and through measures aimed at increasing the resistance of subjects to mental and emotional hazards. This approach essentially provides methods and techniques applicable to mass phenomena, and it makes the following assumptions: (1) Equality of opportunity for all citizens to enjoy the benefits of preventive services that include the protection of mental health; and (2) the ancient principle of *mens sana in corpore sano.*

In the sociological approach to mental health programs, the individual is emphasized as a member of the family and of larger social groups. Social work, stemming largely from the child guidance movement, first developed casework with children and families. Behavior disorders in children were linked with parental care and with other social situations, including poor economic situations. Social service spread to work with adults whose maladjustments could be ascribed to social and cultural factors. Various kinds of public assistance, job placement and occupational and recreational therapy were among the social means of attack. As a broad result of this experience, many social scientists now advocate a nationwide program of preparation for marriage and family living as the royal road to mental health.

Other sociologists have made ecologic and epidemiologic studies of mental illness and have noted that mental disorders are so distributed within a city that high rates are highly concentrated around the central business district. For example, schizophrenia follows this pattern, whereas manic-depressive rates show much wider scatter. Persons of ethnic or racial minority groups living outside their group have had much higher rates of mental illness than those of the numerically dominant group. Other investigators have found that the lowest socio-economic classes contained a disproportionately large number of serious psychiatric cases, as compared with higher classes; that schizophrenia especially was linked with the lowest class structure; and that the type of psychiatric treatment received is associated with the patient's class position. In the lowest socio-economic groups, physical treatment is sought and obtained for personal malfunctions; in

the higher classes, patients tend to seek and get psychological therapies. These studies, supplementing those of public health workers, point up the distribution and degree of mental illness in a population, along with the social factors in causation and correction.

In California the sociological approach has been valuable. For example, since 1938 the Department of Mental Hygiene's bureaus of social work have increasingly worked with patients on convalescent leave from state hospitals. All types of former state hospital patients may now be placed in licensed private homes for rehabilitation. Since 1945, the family care program has been extended to the mentally retarded. Two information centers, staffed by psychiatric social workers, devote full time to parents' groups and social agencies with special programs for the mentally retarded outside of hospitals. A law passed in 1945 enables mentally retarded children to be trained in public schools, thereby helping to keep these children in the community.

The sociological approach places emphasis upon the individual as a member of society or of the family, and upon the social and cultural determinants of mental illness and health. This approach stresses the importance of social factors both in the causation and in the rehabilitation of psychiatric disorders, which are here regarded as essentially symptomatic of a "sick" society. The sociological approach assumes that: (1) Social and family conditions are not merely the results of individual psychobiological adaptive mechanisms but are, more importantly, prominent as etiologic factors in psychiatric disorders; (2) criteria for healthy and pathological patterns of social organization, and for social action with respect to individual and communal mental health are applicable to the problem of mental illness; and (3) correctional measures, applied to both social conditions and (through education) to individuals, promote mental health.

A combined approach to mental health programming that includes the traditional, public health and sociological viewpoints and principles, has been applied in California and has achieved modest results. By early 1956, the state population had risen to more than 13 million, with the population in some cities and counties having doubled or trebled since World War II. The Department of Mental Hygiene, with its caseload of 56,500 patients under treatment, had 36,500 resident patients in the ten mental hospitals, 8,700 in hospitals for the mentally retarded and 8,300 on convalescent leave, under the supervision of the bureaus of social work. Each of the state's 58 counties had at least one psychiatric social worker assigned to it, with field offices in 18 of the larger cities. The state mental hygiene clinics had over 2,200 patients in treatment at any given time and were seeing over 6,000 patients per year for an annual total of 38,000 treatment hours. By June 30 of 1955, the seven state mental hygiene clinics, of varying ages, had admitted in less than a decade a grand total of 18,400 different patients. These were patients who could not afford psychiatric care on a private basis; indeed, 85 to 90 per cent were financially dependent or in marginal economic circumstances, and most of them were referred by the medical profession. The outpatient departments of the Langley Porter Clinic and other state hospitals bring the total number of outpatients to about 50,000 treated since 1943. The staffs of these state-operated clinics have been steadily increasing the amount of time devoted to work with children and youth. During the past five years, furthermore, about 17 per cent of staff time has been spent in community mental health services, such as consultation to schools and other social agencies, mental health education and community organization.

Despite the shortages of psychiatric personnel in most states, California has managed to recruit a steady increase. The Department of Mental Hygiene now has about 300 psychiatrists and physicians, 100 clinical psychologists, more than 300 psychiatric social workers, over 700 graduate nurses and 6,700 psychiatric technicians.

It is noteworthy that the state has 11 per cent of the membership of the American Psychiatric Association. Most of these psychiatrists, however, serve the metropolitan areas, and most of them confine themselves to private practice and volunteered services.

The 267 privately operated hospitals and sanitoria that are under licensure and minimal supervision by the Department of Mental Hygiene, in 1955 had over 6,000 inpatients. A small but growing number of nonprofit, private, general hospitals treat short-term, acutely ill mental patients in psychiatric units; again, these are mostly located in the larger urban areas.

Several indices point to increased efficiency in the over-all picture. The state mental hospitals now admit 20,000 patients per year, but they discharge patients as recovered or improved so fast that the past fiscal year's increase was only 750 patients. The index of release rate shows that mental patients now have a 25 per cent better chance to leave the hospital than did patients in 1947. Improvement or recovery rates run as high as 85 per cent of discharged patients. All clinic patients are voluntary admissions, and, with the modernization of the state's commitment laws, an increasing number of state hospital patients now enter voluntarily, at a stage of their illness when optimal results can be

expected. However, the main factors accounting for the striking improvement in the release rate are the steadily increasing medical, nursing, rehabilitative, and social services during the past decade. Although the protection of society from the insane remains an important legal responsibility of the State Department of Mental Hygiene, the combined approach shifts the emphasis from custodial care to active, up-to-date treatment and from exclusively intramural services to extramural programs of both a preventive and rehabilitative nature.

The Department of Mental Hygiene has also helped to organize and finance many of the privately supported and administered community clinics. For example, it helped to create the California Association of Community Psychiatric Clinics, whose chief purpose is the reporting of uniform statistics.

There are now 57 community psychiatric clinics in California. Twenty-five are privately supported, sometimes with the aid of Community Chest funds and national mental health funds. Nineteen are operated by state agencies, such as the four maintained by the University of California, four operated jointly by the State Department of Mental Hygiene with local health departments, one established exclusively for parolees of the California Adult Authority, and ten administered by the Department of Mental Hygiene. Nine clinics are operated by counties and four by the Veterans Administration. Of the 57 psychiatric clinics or outpatient departments in California, 26 are attached to hospitals and 19 have received federal grants-in-aid.

In 1951 the State Mental Health Coordinating Committee, advisory to seven state departments (Corrections, Education, Mental Hygiene, Public Health, Recreation, Social Welfare, and Youth Authority), was created for the purpose of integrating and coordinating their mental health programs. The Department of Corrections, for example, has psychiatric personnel to deal with the offender from his conviction, through imprisonment and parole, to his release. The Youth Authority's two reception centers provide psychiatric evaluation as a basis for placement in a special facility. The Department of Education encourages inclusion of mental health in the school curriculum, provides consultation on mental health to educators and fosters increased use of school psychologists and social workers. The Bureau of Vocational Rehabilitation, under the Department of Education, includes psychiatric services for selected, physically or mentally handicapped persons. The Mental Health Unit in the preventive medical services division of the State Department of Public Health offers consultation to local health departments as well as to the rest of the State Department of Public Health. Since recreation and group-work may conserve and improve mental health, the State Recreation Commission encourages programs in hospitals, camps and other institutions; it also helps to create or expand community recreation programs. The State Department of Social Welfare utilizes mental health principles in the course of state-level consultation and supervision of local public assistance programs, foster home care and adoption procedures.

The combined approach considers the individual (ill or healthy) simultaneously as an individual and as a member of a family or larger social group. That is, the approach of psychosocial medicine to diagnosis, treatment and prevention is based upon the following assumptions: (1) Mental illness and health are relative to a hypothetical norm in a bio-psycho-social frame of reference; (2) biological, psychological and social components in either mental health or mental illness cannot be dissociated in considering either the causation and prevention of mental illness or the preservation of mental health; (3) the dynamics of personality are conceived in terms of the individual's continuous interaction with a social reality; and (4) mental illness or health is specifically determined by individual biological and psychological forces, but the social reality, including the psychological environment, may support or hinder the integrative forces within the personality.

GUIDING PRINCIPLES AND PRACTICAL CONSIDERATIONS

If the individual and his personality development cannot be separated from his social reality, the combined approach to a mental health program suggests practical considerations and some guiding principles:

1. Inclusion of both treatment services for individual patients and preventive services for groups of potential patients (for example, protection of the mental health of children and youth);

2. Recognition of multiple causation in both the production and prevention of psychiatric disorders, as well as in the conservation of mental health;

3. Joint responsibility of all levels of government (federal, state and local) for the establishment of mental health services, preventive and therapeutic;

4. Sharing or distribution of the costs of mental health services by those individuals who are directly served (through fees), by the public (through community chests and taxes), and by professional volunteers offering services without cost;

5. Local autonomy in both initiating and administering mental health services whether through local government or on some other basis;

6. Flexibility permitting wide local variations in program, so that each program may fit the special local conditions to the greatest possible extent;

7. Coordination and integration of efforts now scattered throughout different public and private agencies and professions, into a well organized program having mental health as a primary, rather than a merely secondary, goal;

8. Equality of opportunity for all citizens to secure services, both preventive and therapeutic, and to pay for these services according to their financial ability;

9. Recognition of the fact that administrative responsibility and financial responsibility do not necessarily go hand in hand;

10. Acknowledgment that scientific answers will always be incomplete no matter how long action is delayed; therefore, program evaluation and research should be included in programs for mental health services. (For example, the Department of Mental Hygiene, with both professional and financial help from the National Institute of Mental Health, is currently evaluating hospital and clinic treatment in comparable psychiatric cases);

11. Avoidance of false claims and over-selling of programs without minimizing the needs or problems encountered.

2900 Buena Vista Way, Berkeley 8.

For Your Patients—A number of specialists have asked that a slight copy change be made in Message No. 1. This has been done and now Message No. 1A is available as well as Message No. 1.

A Personal Message to YOU:

I consider it both a privilege and a matter of duty to be available in case of an emergency. However, you can understand that there are times when I may not be on call. I might be at a medical meeting outside the city, on a bit of a vacation—or even ill.

Consequently, I thought it would be a good precaution if—on this gummed paper which you can paste in your telephone book or in your medicine cabinet—I listed numbers where I can be reached at all times. Also, the number of a capable associate as an added service. Here they are:

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OFFICE	HOME	ASSOCIATE DOCTOR

Sincerely,

_____, M.D.

MESSAGE NO. 1A. Attractive, postcard-size leoflets printed on gummed paper, you to fill in telephone numbers ond your signature. Avoiloble in ony quontity, ot no chorge, as onother service to CMA members. Please order by Messoge Number from CMA, PR Deportment, 450 Sutter, San Francisco.

Child Development

Problems of Discipline, Authority and Rebellion

J. P. KAHN, *M.D.*, San Francisco

• **It is only through the love and approval of the significant adults in a child's life that he is able to give up his primitive behavior for that which meets the demands of social living. Conflict over authority is only one of many conflicts. There are conflicts which arise inherently in a child's development. The task of the parents in the education of the child in our society is to enable the child to tolerate a certain amount of frustration and also a necessary degree of control of impulses so that he can live in a group and in conformity with the required standards.**

Increased rebelliousness and defiance are normally characteristic of certain periods of development in healthy children. These are when concerted discipline begins, and in early adolescence. But other events also may reactivate or stimulate attitudes of defiance and rebellion. Even in his rebellion, a child needs and expects his parents to stand for order, as well as for love. He expects that the parent will save him from the consequences of his own destructive impulses, which he as yet may not have the strength to withstand.

Deep-seated or submerged factors in the parents may play a significant role in the discipline to which they subject their children. True permissiveness means allowing a child to develop according to his own rate of speed and his own potentialities as a unique individual. It includes refusing the child any type of behavior that will bring danger to him or to others.

A parent who uses harsh and rigid forms of discipline may force a child into submission, rather than acceptance and understanding. This produces only surface conformity which hides insecurity and violent underlying destructiveness.

THE EARLY EXPERIENCES of a child have a decisive influence upon the kind of person he will grow up to be. Paramount among these is the discipline and authority to which the child is exposed, designed to enable him to conform to the demands of society and group living.

The purpose of this presentation is to discuss broadly the problems of discipline, authority, and rebellion, as they exist in our culture, as well as some of the determinants of their origins, development and derivatives as they impinge on the child in his striving toward adult independence, maturity and socialization. Authority is something that envelops us from a very early age, first in the form of parents, and later in parent substitutes like teachers. We experience it also in social, cultural and legal pressures. The word itself for many of us has unpleasant associations.

The first demands made on a child are from his parents and the family as a whole. But society, too, molds the child from birth on. This is because the parents apply the educational patterns of the society they live in. In their own personalities, they represent the character of their society or class. They transmit to the child the spirit and values of a group by being representatives of that group. In this sense, the family is the authoritative agent of society. Society, however, itself contributes to the aggressions and confusions which parents face in children and in themselves. One reason for this is that society produces for its children one set of values in school, home and church, and another set in the competitive world they face outside.

For most children, the discipline associated with bowel control is the first discipline to which they are exposed. The child reacts to this as a limitation of the freedom which he has previously known—which of course, it is.

Eliminations and the regularization of them present the child with life tasks that may create persistent needs. It is easy to forget what a profound physiological disturbance this whole business of bowel and bladder training imposes on the child. The physiological processes of elimination are extremely well organized, so that automatically the muscle sphincters of the bladder and the rectum respond to accumulated pressure within. When toilet training begins, the child is asked to surrender this physiological autonomy. Instead of functioning in accordance with his needs, he is asked to inhibit the sphincter muscle response to pressure, responding instead to an external stimulus—vessel, place, and so on—presented by the parent or other adult. Moreover, he is asked to respond at a fixed time—not infrequently whether he needs to or not. In this training, the child is expected to subordinate his processes to outside events and times, giving up his own body autonomy, often months before he is

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sufficiently mature to make such an adjustment. Maturity does not mean chronological age, or weight or size: it means that the child has had enough of an activity, such as sucking or unrestricted elimination. to be able to go on to something else without a persistent feeling of deprivation or an unsatisfied infantile longing.

The way the child adjusts to this first discipline will be important for the attitudes and behavior toward authority that he has in later childhood and adult life.

His reaction to this discipline and his willingness to submit to this limitation will depend in great measure on his relationship with his parents. It will depend on how he feels about them and on how important the continuation of their affection and approval is to him. It will depend on whether he feels that what the parents are asking from him is right and reasonable and for his own good. The emotional tone or attitude of the parents is the important thing, not their actions, for the child will react to the tone or attitude and will feel any tenseness or overemphasis or dislike in the parent's voice and handling. The importance of the manner and tone of voice lies in the child's feeling that he is being deprived by this training. Any anger or impatience then may become an occasion for him of anxiety and feelings of guilt.

Many adults may carry over from their own childhood a feeling of anxiety or disgust at feces, so that they are not able to treat the child under their care without emotional strain when faced with this process, which for the child is entirely normal, and unconnected with unpleasant emotions, until adult interference begins.

The child's reaction to this discipline will depend also on whether his body growth at the time the demand is made has advanced sufficiently for him to be able to comply. If training demands are made before the first year, the child's muscular control is just not yet ready for this task. Demands that cannot be met will simply result in frustration for both child and parent. So there will usually be some hostility and rebellion, open or hidden, to this first demand for control, but most children will emerge from this first experience in discipline—that of bowel control—feeling that their sacrifices in attaining control have been well repaid by the parents' approval.

A child who does not have parental affection, or on whom the demands are made prematurely, feels outraged and cheated at having to give up part of his freedom without getting anything in return.

Of course, children can be taught to conform under fear of punishment, but learning through fear is not economical: since it brings no pleasure, the child relapses easily or fails completely.

The effects of training a child too early or too severely are seen regularly in both the pediatric and psychiatric clinics.

Constipation, diarrhea and other intestinal complaints are the psychosomatic illnesses that may be induced by interferences with this phase of growth. Stubbornness is a common result of the parents' efforts to force their will on the child; this sometimes develops even to the point of the child's not talking; of his being verbally constipated. Or the child may be made unduly anxious over dirtiness and become a slave to cleanliness for the rest of his life. Or he may become so preoccupied with his body functions that there is no psychic energy left for a productive life.

During this stage of growth and development the mother, who was at first only the good indulgent provider, has to become the interpreter of society's demands. This means she must not continue to give in to the child's primitive wishes. She *must* frustrate him to an extent, to be a good mother.

Consciousness of the excretory functions presents the child with a dilemma. As was previously mentioned, the child has none of the feeling of revulsion for his excreta which the adult has developed. This is a learned reaction. To the child, his stool is part of him—something he has produced, his own creation. The odor, texture and color are not unpleasant to him. He prizes it. His mother's attitude has made him believe that she also prizes it. She implies this by her pleasure when he has a bowel movement and by her concern when he fails to do so. This is even more pronounced when toilet training actually begins.

The mother's behavior is confusing. She asks for the gift; praises him for giving it, as if it were highly prized, and then proceeds to flush it down the toilet.

Now if a woman asked her husband for a diamond necklace and then when her husband gave it to her as a proof of his love, she treated it in a similar fashion, the husband's anger and surprise would be considered justified. To the child, the mother's attitude toward his bowel product is just as confusing. Sometimes the child will indicate this concern by throwing toys and other objects into the toilet and then try to retrieve them, as if he were trying to solve the riddle by finding whether it is possible that this apparent disappearance of the object might not actually be a matter of its being stored away, to be retrieved at will.

His control over his bowels is significant to the child from another angle. It is dramatic evidence of his increased power. He is now in a position where he can either give or withhold. This gives him a realistic sense of his own strength. With this capacity to control his excreta, the child has a tool for direct attack upon the parent, and thus a means

of expressing his hostility. Many parents express such eagerness to have toilet training completed that the child recognizes that at last he has found the parent's Achilles heel.

As was mentioned, the confusions of this period may be manifested in different ways. A child may develop pronounced constipation. One child had no bowel movement at all for two weeks. When placed upon the toilet, he would say: "I won't give it to you! I won't! Go away!" A child may refuse to comply with a schedule. He will not urinate or pass a stool as long as he is on the toilet but will soil himself immediately afterward. He may hide the feces, or smear it. He may develop diarrhea, so that the movements are beyond his control. There may be many reasons for this kind of behavior. The child may not understand what is wanted by the parent. He may be trying to avoid the destructive attitude the parent manifests toward the "gift" by withholding his feces, or hiding it in secret places. He may be unable to give up the narcissistic gratification the product of his creation offers. He may be expressing hostility toward the parents, which may have its origin in the requirements of toilet training *per se*, or the parent may be asking him to forego too many *other* primitive pleasures at the same time, thus arousing a defensive anger in the child. Perhaps the entire emotional relationship with the parent has been frustrating to the child, as a result of which he is hostile. Maybe the child for some reason is not willing to relinquish the helpless state of infancy, and is therefore resistant to taking over the responsibility of controlling his behavior. Maybe the child would rather be powerful than loved. The point of all this is that because of the physical and emotional demands of this period, it is not infrequently a confused and angry and stubborn and resistant period, with temper tantrums and general behavior indicative of rebellion, and difficulty in conforming to parental demands. Even in yielding, a child may repress his mounting anger toward a parent who demands what the child does not wish to give, but what he dares not refuse.

In any event it is, significantly, during this phase of development, when demands are first made on the child, that an attitude to authority is formed. It is during this stage that the roots are laid down from which develop the child's later attitudes and responses to discipline and authority, even to those of his adult life. The reaction continues in later life as an attitude to anyone or anything which makes demands of him.

In learning bowel control, and also in learning concomitantly control in other areas, the child grows and can accept limitations only through his relationships with adults. It is only through their love and approval that he is able to give up his primitive behavior for that which meets the demands of social living. If the love is real enough and strong enough, and the discipline used by the parents fair and just, the child does grow. He gives up his untempered behavior and accepts the social need for conforming, to a reasonable degree. We see, then, how discipline starts and an attitude to authority is significantly influenced by the social need for controlling a physiologic function.

In our culture, the final authority figure is almost always a man. It can be a priest, a soldier, a judge or a president. In the family, however, the first authority is the mother. It is she who does the disciplining in the early years. When the child is able to use and understand language, the father then usually comes in as a disciplinarian. The mother will say, "I will tell your father when he comes home." This becomes more frequent as the child gets older. Gradually, the father comes to supersede the mother as the one who administers discipline. When the child is around three or four years old, the father becomes quite important in matters of discipline and authority. By that time, all the early feelings and reactions of the child toward the first authority, the mother, are transferred to him. So we see that the figure of the male authority has behind it the more primary one of the mother. All the defiance, rebelliousness and resistance originally was directed toward the mother in her attempts to make a social being of the child. It is interesting to see that, in journalism and the movies, there is a great deal of acknowledgment of the partially hidden female behind the figure of the male authority. For example, we are always interested in knowing about the mothers and wives of our presidents.

As a child grows, he is increasingly subjected to the socializing process. This is necessary if he is to be able to live in a social group. The demands of the socializing process make it inevitable that his parents will frustrate the child in a number of areas. There are many things he cannot be allowed to do. This is both for his benefit and the benefit of others. The child will react to this with hostility, aggression and rebellion, just as he did earlier. A conflict may arise because of the child's fear that the expression of these feelings will cause him to lose his parents' love. Because of this reaction in their children, some parents may feel anxious at limiting their behavior. But frustration is a very relative thing. There are unavoidable frustrations without which nobody would grow up to be a social human being. There are also frustrations imposed through false values by parents.

Discipline, of course, should be for the child's sake, not for the discipline's sake. It is well known that the things learned first and earliest are the most important and the longest retained. Since parents are the first authorities in the life of the child, the way they handle the problems of discipline are of crucial importance in the later attitude of the child toward authority. As the child gets older and the authority of the parents is replaced by that of teachers, bosses, political leaders and so on, the attitude toward authority learned from the parents will largely determine his reaction to these others.

The way a parent presents the issue is important. Was it explained to the child and was he included in the issue, or did it appear to him as unintelligible, arbitrary and overwhelming? Did the parent say: We are doing this or we are asking this because we are concerned about you? Or did he just say to the child: This is the way it is! Was the discipline based on a rigid set of conventional rules or were the parents guided by the desire to help the child in his attempts to grow up? Was the discipline handled as a force outside of the child, to which he must submit? Or was it an understandable, assimilable discipline, inviting the cooperation of the child?

Children can stand a great deal of frustration as long as they are sure of their parents' love and as long as they understand somewhat the reasons for the discipline. As long as the discipline has a real purpose behind it, which includes the benefit of the child, perhaps it need not necessarily lead to undue aggression, or only to minimal aggression. But almost invariably, children will react to a limitation of their freedom with a certain amount of hostility and aggression expressed in one way or another.

Parents should not blame themselves for all the defiance, rebellion or other difficulties of their children. For one thing, parents have had their own parents, who have significantly shaped their character structure, including the way they react to and handle their children. The concept of blame is neither realistic nor fruitful. An erroneous conclusion is that if a child were properly brought up, he would have no emotional difficulties. But conflict over authority is only one of many conflicts. There are conflicts which arise inherently in a child's development. For parents to understand these conflicts may be a help in tolerating their children's difficulties. This understanding may ease the guilt of parents who feel responsible for their children's troubles. It may enable them to deal more wisely with transient problems and so lessen the risk of the child's rebellion and defiance turning into settled attitudes.

Childhood is a time of growing and becoming. There are no shortcuts in growth. Certain changes have to be lived through by children—and by parents. Knowing this and accepting it makes it easier —sometimes—for parents to live through periods when children can be extremely exasperating. While it is not possible to give parents a blueprint that would tell them how to handle each specific problem in a specific way, we can give to parents and educators a basic understanding of the child's emotional struggles and a dynamic orientation toward the problem of discipline. The task of the parents in the education of the child in our society is to enable the child to tolerate a certain amount of frustration and also a necessary degree of control of impulses so that the child can live in a group and in conformity with the required standards. Parents who themselves do not accept and are unwilling to conform with the standards of our society are unable to achieve this in their children. Particularly difficult for the child is a situation where each parent takes a different attitude. In such a case the child behaves as if pulled all the time in opposite directions.

At all times, it is well to remember that every child is an individual and proceeds at his own pace.

All children at one time or another and in one way or another are rebellious and defiant. Some children are decidedly so throughout the whole of their development. It becomes their characteristic way of responding to all adults and authorities. The extremes of this are delinquent children and habitual adult criminals.

Increased rebelliousness and defiance are normally characteristic of certain periods of development in healthy children. These develop in the second and third years of life when concerted discipline begins, and in early adolescence. But other events also may reactivate or stimulate attitudes of defiance and rebellion. Circumstances which cannot be helped may cause increased resistance to authority. Examples are financial trouble in the family, the birth of a new baby, the illness or death of a loved adult. Merely being the oldest or the youngest child may contribute to resentments and frustrations, leading to increased rebellion. An example may be an older child who is expected to devote too much time to his younger brothers and sisters, or a younger child who has to submit to the authority of an older brother, as well as to the parents. The interplay of different children in the same family may enhance the normal tendency to rebelliousness. The particular child may not be able to solve the problem in any other way than by this increased rebelliousness. Because children of the same family are different, and because they do have different meanings for their parents, jealousy between them does exist and may be manifested by rebellion.

There are underlying motives common to all rebellion, but there are also many individual meanings. Rebellion may be used to deny the existence of authority. An example is the small child who blithely contradicts everything his mother or father may say. At all times, defiance and rebellion may be used to see what one can get away with; what the limits really are. An ordinary example is that of the small child who refuses to go to bed at his usual time. He is trying to see just how late his parents will let him stay up if they are pressed.

Rebellion is also a means of bringing upon himself the punishment that the child secretly feels he deserves because of the bad thoughts he has. An example of this would be the destructive wishes aroused in a child by jealousy of a brother or sister. The child feels a need to confess; to bring to the notice of the parents these bad wishes, which to him may be identical with the bad deed. Under this kind of stress, the child can feel at ease only if he is sure that his parents know the danger they or others are in from his secret submerged unacceptable thoughts. This need to confess is one of the motives in the small boy for using profane words or, at a later age, for compulsive stealing or destruction of a kind that is bound to be found out.

Rebellion may also be a defense against the fear of parents and other persons. Much of the small child's defiance springs from a need to test his parents; to see whether they are what he fears them to be in his imagination. He wants to know what they will do to him if he actually does become destructive and hostile. A child who destroys his favorite toy may do so because of his need to find out just what his parents will do to him. He wants to know the worst.

Rebellion and defiance may even be used as a defense against all the anxieties which go along with feelings of love. It may be a safety device, directed against a feeling of too great closeness to the parent of the opposite sex. The fear of the adolescent regarding his rivalry with his father may lead him to turn away from home in defiance and rebellion. The little girl's rivalry with her mother may cause her to be rebellious and difficult.

Most of these defenses exist in everyone, but their roots may be more or less deep-seated. Deepest of all in every person are the anxieties arising from the first and primary relation with the mother—from the need and desire for food and love. The infant's needs for affection and nourishment are intense, and the two are indistinguishable to him. He is afraid of losing them. This is the same for him as losing the mother. This is the first anxiety a human feels. Some feeding difficulties, for example, may be due to the child's fear that his taking in food will diminish the supply of affection and nourishment. It is possible for a fear like this to lead to all kinds of rebellious, obstinate behavior.

Parents will react in different ways to a child's difficult behavior, but it is well to remember that even in his rebellion, a child needs and expects his parents to stand for order, as well as for love. He will be bewildered and frightened by a parent who, perhaps as a reaction against his own upbringing, indulges the child's lawlessness under the guise of permissiveness. What the child expects is that the parent will save him from himself; from the consequences of his own destructive impulses, which he as yet may not have the strength to withstand.

The other part of this attitude in parents appears as a subtle but major resistance to gentle or permissive discipline on their part. It is the fear that any liberal attitude toward the child will permit him to get out of hand. But in fact permissiveness includes refusing the child any type of behavior that will bring danger to him or to others. Usually parents who were themselves dominated in their childhood will have a need to discipline their children in a rigid fashion. Parents may see in their child their own struggle against the unjustness of rigid authority. They had to submerge their resentment against their own parents which was caused by severe discipline. So they subject their own child, as they were subjected, to strict policing. We see, then, that deep-seated or submerged factors in the parents may play a significant role in the discipline to which they subject their children.

There may be times when all parents use fear or other coercion in shaping their children's conduct. All may find themselves in positions in which they threaten and scold, bribe and punish. This is mostly not good. But there is no reason to expect parents to be perfect. There are, however, better ways than fear and coercion. If a child loves his parents, he will, without even thinking about it, want to please them, and he will do many things because doing them wins approval. Gradually he will learn that these things please him too, and he will do them for that reason. In time, the parents' standards will become the child's and it will be his own developing conscience that guides him.

When all is said and done, whatever devices are used to get obedience, to enforce discipline, are pretty unimportant compared to the attitude brought to bear on the situation. The general attitude, or feeling-tone in the family is extremely important. Competitiveness and perfectionism and unreasonable expectations interfere with permissiveness. Permissiveness means allowing a child to develop according to his own rate of speed and his own possibilities. It means that the parents realize that he is a unique

individual. But because, as we have said, allowing a child to get out of hand is frightening to him, it is important for a parent to maintain authority—the authority of a person who loves him; who is just; who the child can see is just; the authority of a person who is fair with him; honest with him; understanding of him. For a parent's secure authority is the rock on which for a long time the child must lean.

A parent who uses harsh and rigid discipline may force a child into submission, rather than acceptance and understanding. Such parents are seen by the child simultaneously as the providers of one's physical needs and also as capricious, usually inconsistent arbiters of punishment. The relationship between such a parent and the child will usually be lacking in genuine affection. The pressure to conform to parental authority makes it difficult for the child to express his aggressive and other instinctual forces in a constructive fashion. The result of this sort of background in a child may lead to a personality which is both narrow and rigid. A person like this cannot give love because he received little. And it is unlikely that he can give of himself in any other creative activities. For this to be different, more affection and more guidance on the part of the parents is needed. Since the child of harsh and rigid parents gets neither affection nor guidance, he often may be either too inhibited, or delinquent. These are opposite sides of the same coin. The delinquent person has not acquired enough internalized controls to limit his aggressive feelings to a socially acceptable degree. The inhibited person is so afraid of his feelings breaking loose that he keeps a rigid clamp on them, usually by denying their existence. Sometimes they break loose anyway. The example that comes to mind is the parson in Somerset Maugham's *Sadie Thompson*.

The necessary internalized controls can occur only as a result of a good relationship between a child and his parents. The child hears his parents' voices saying: Don't do it; I won't love you if you do. Because the child loves his parents and because their love is important to him, he pays attention and accepts the limitations. As he grows older, the child says these words to himself—even in the absence of the parents. This is how the conscience grows and this is what we mean by conscience. At an extreme level, there may be a failure to develop any conscience at all. In this case, we have an asocial, destructive person. In psychiatry, we know this kind of person as the psychopath. He is the individual who cannot delay the pleasures of immediate gratification and lives only for the moment. He has no built-in restraints.

We can go further in examining the developing personality structure. The child with harsh and rigid parents may take over their attitude toward power and control. He has their basic contempt for the allegedly inferior and weak. This of course is but a reflection of his parent's attitude toward him. He feels hostile himself because of his early experiences, and has come to expect from others what he has learned from his parents—that they will be unkind and frightening. His real attitude toward life is one of fear, and his approach to people, therefore, will be to exploit them for his own ends. A child who is forced into an apparent submission to parental authority will develop hostility and aggression to an excessive degree. These feelings will be poorly directed. The feeling of hatred is frequently attached to minority and other unpopular groups. A child who does not have to submit to stern authority does not need to assert his strength against those who are weaker. The child who is forced into fearful submission develops into a punishing person. This mirrors the kind of discipline to which he himself was exposed. As he grows into an adult, he has a rigid attitude because this keeps his rage and insecurity under control.

Much of the feelings that originated in the relationship of the child to a harsh, rigid parent are covered up over the years, but may show up in violent opinions about say, political leaders or foreign countries, which may fulfill his need for a whipping boy. People like this distort even factual knowledge. It is for this reason that information *per se* does not necessarily lead to greater tolerance.

Rigid discipline can sometimes be masked. Someone has said that children learn to walk so that they can walk away. This is as it should be. But there are parents who seem to be concerned and sensitive to their children's needs, when actually this hides a determination to control them and to keep them always children. The child may be given everything —except the right to grow up, to develop to the point where he can be free and independent, can walk away. The result here, too, will be a fear of authority. Authority to the child will imply being caught and blocked in his desire for growth.

From the standpoint of society, a child's attitude toward authority is an extremely important problem. As we can see, forced submission to authority produces only surface conformity which hides insecurity and violent underlying destructiveness. This is dangerous to the very society to which there seems to be this conformity.

In contrast to this fearful person, the child with permissive, affectionate, unthreatening parents will have a permissive and trusting attitude toward others. He will look at the world as friendly, rather

than dangerous. He will expect affection from others, and will be less interested in acquiring power over them. He can give affection because he has received it. He fears punishment and retaliation less. He is better able to identify with the aims of the society in which he lives. He has the help of his parents in working out the problems of sex and aggression. Because of this, he is able to use his energies for creative and socially useful purposes. He is more flexible and sees people as individuals rather than types. As a result he is less prejudiced. He is able to express disagreement with his parents in an open fashion. This results in a much greater degree of independence from them and from authorities in general. Such a child is far more likely to develop into a person with the qualities we think of as belonging to a mature person. Such a person will be able to love and to work productively. He will be interdependent, rather than childishly dependent or unrealistically independent. And he will not need to dominate or exploit other human beings.

Stanford University School of Medicine, San Francisco 15.

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The Child's Sexual Life

A Consideration of Clinical Implications

JOSEPH D. TEICHER, M.D., Los Angeles

• **A healthy sexual life begins in childhood, and the groundwork for later difficulties also begins in childhood. For the child, sexuality is a rather general, pleasurable excitation, not a specific genital stimulation. Excessive attention to the perineal area, operation upon or injury to the genital area and injections are vicissitudes which may have an unhealthy influence on later sexual development. Healthy and informed parental attitudes are the key here, just as they are in the normal exhibitionism, curiosity and intense emotional attachments to parents. Parents infect children, healthily or unhealthily, with their attitudes. In healthy growth exhibitionism and peeping become transformed in socially acceptable ways. In unhealthy growth, either perversions or strong reactions like over-modesty or shame result. Masturbation is common and transitory in most children. Parents, and especially pediatricians to whom parents turn, have a golden opportunity to direct healthy growth by being well informed about the infant and child's sexual growth and thus be enabled to advise upon or manage the common developmental phenomena with good commonsense and patience. Infants and children do not enter the world possessing the morals, standards or inhibitions of adults.**

THE MERE FACT that a child has a sexual life, although not in the adult sense, poses problems for child, parents and society. The child has his own reactions to his sexual feelings and behavior, his parents react to the child's sexuality and to the stirrings this makes in them, and our society has its codes, ethics and current teachings. The complex interaction of all these factors has much to do with the child's eventual heterosexual adjustment.

For the child and infant, sexuality is a rather general, pleasurable excitation; not a specific, genital stimulation. The infant's and child's life has been termed bisexual, and there is evidence that both boys and girls produce estrogen and androgen in small quantities. There is evidence that female sex hormones may influence the male embryo, which may account for a varying degree of bisexuality at birth. Also, through lactation and physical care, a mother conveys many influences, which for the girl are in the direction of appropriate later psychosexual development. However, for the boy, the result is to intensify the feminine component in him. One 2-year-old boy may be characterized as a "real boy," independent and assertive; another as a "sissy," afraid of any new step. Of course, this need not be solely the consequence of hormones.

More specifically, one sees congenital conditions such as hypospadias, undescended testicles, or rarely, hermaphroditism. Such conditions may require special treatment and focus attention necessarily upon the genital area. The treatment may involve injections or surgical operation, and the end effect on the child's personality and sexual life depends upon the cause, the degree of the defect, and the age at which treatment is carried out.

Disease or injury leading to hypogonadism; any injury to the genitals: dermatologic conditions or infections involving the genital area, like itching rashes or discharges, certainly focus attention and treatment on the genital area. Operation and instrumentation like cystoscopy and passing sounds have their effect, too. Nor need the operation be limited to the genitourinary area; any operation at certain stages of the child's growth may have an effect far beyond the removing of, say, diseased tonsils or a necessary circumcision.

Hypogonadism, whatever the cause, is due to a deficiency of gonadotropin, which causes failure of the gonads. In severe cases, it may lead to eunuchoidism. Diagnosis and indicated treatment is always the province of the pediatrician.

What are the psychological consequences of the hypogonadism? It is reflected in the boy's personality, which is described as neutral or asexual, rather than feminine and boyish. Girls tend to be "sweeter," more girlish and therefore less noticed in a group, while a boy is often the center of hostile attention. Puberty, particularly, is the time when hypogonadism becomes painfully obvious and sets the lad apart from his group.

His adjustment depends on his capacity to adapt to his own inadequacy, which may be very difficult when the environment is unsympathetic. The family

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is all too often ashamed of the lad, who already has a sense of shame accompanying his sexual inadequacy.

There is a kindred condition, which can be labeled "psuedo-hypogonadism, parental anxiety type," which is not a true condition of hypogonadism but usually a delayed maturation in a boy at puberty. Parents are convinced the lad should be taller and his genitals more developed; no reason or explanation influences them. They will do the right thing by their boy, whether he likes it or not, or the physician likes it or not. Sooner or later they find someone addicted to giving endocrine shots, quite honestly believing in the wisdom of this. For example. Jim was a short, plump lad in early puberty. His parents were short and plump. They were determined their Jim was going to be a "typical Californian"—a rugged six-footer. They found someone who shared their concern and Jim received a vigorous course of appropriate endocrine therapy. Poor Jim then had overly developed genitals and very sore buttocks—and was not a whit taller. Confused and apprehensive, yes; but not taller. And his parents, although disappointed, were so proud of the new tangible evidences of Jim's masculinity that, were it not that our society frowns upon ostentation of some kinds, they might have called attention to the distinction, much as proud parents show off a child's particular talents.

Excessive therapeutic attention to the perineal area in the form of bathing, applying lotions, scratching, irrigation and poulticing are often stimulating and seductive in effect. All pediatricians have known mothers to complain that their children liked to be bathed and patted in the genital areas long after the illness that demanded the treatment had passed. Depending upon parents' attitudes toward this activity, either this passes or unhealthy consequences result from punitive, repressive measures.

Any surgical operation, instrumentation or injury to the genital area becomes woven into the sexual fantasies of the child and is very often conceived of as punishment for wicked or forbidden thoughts, wishes or deeds. Injections, too, may become frightening and punitive. To repeat, the operation or injury need not be to the genitourinary area; it can be anywhere in the body, although the limbs, the throat and the eyes have a more special psychologic significance.

For illustration:

Bobby, nine years old, had an extremely tight prepuce and circumcision was definitely indicated. However, Bobby had been thoroughly indoctrinated by his mother with the following: "You must not let your penis ever get dirty. It will get infected and rot. If you touch it, eventually it will fall off, or it will be necessary for the doctor to operate on it."

Lo! His worst fears were confirmed. He had done just what he had been warned not to do—and circumcision was the punishment. Fortunately, the surgeon recognized Bobby's real terror and psychologic help was given to both the boy and his mother before the delayed necessary operation was done.

And Chico. Chico was an 8-year-old boy who was always "wild and stubborn," according to his parents. They thought he was unusually interested in sex, had "girl friends," suspected much sex play. Their management consisted mainly of threats, bribes, pleading and strict punitive measures, which had little effect. Chico told the author later that he always remembered that his parents said. "You'll get yours: God will punish you." Chico was struck by a car, suffered broken pelvic bones, a ruptured bladder and torn urethra. He was very sick and required extensive operation and instrumentation, including urethral catheterization. He had nightmares, talked wildly in his sleep and thrashed about. Of course, for a time he had good organic reason to be upset; but when he was convalescing his general anxiety was so pronounced that psychiatric evaluation was sought. For him, "You will be punished for the bad things," was grimly realized in the terrible injury he had.

An infant, quite as unabashed as the fabled South Sea Islanders, is without shame or disgust. He examines himself, explores his body openings and his organs. He pats here, tugs there, pulls, and tends to repeat what is pleasurable. There is no concern, no guilt, no anxiety. I have seen parents flush when their babies are being examined and the baby accidentally touches the genital area. The flush bodes ill, for it is well known that attitudes of nasty, dirty, disgusting, and the proximity of the genital area to the excretory organs tend to mix "sex" with "dirty" and eliminative functions. In later childhood and eventually adulthood, that "sex is dirty and nasty" is the foundation of many of the sexual inhibitions and difficulties one sees so frequently.

The growing child, quite without assistance from the outside, has definite anxious reactions to his positive, possessive feelings toward the parent of the opposite sex. Of course by the time he is four, when these anxious reactions are at their height, he has already been infected with parental attitudes about toilet training, cleanliness and body exploring. How the parents regard their "little lovers," as one mother humorously said, and the relationship that has existed between parents and child prior to this crisis of development, determines the later pattern of development—the kind of masculinity and femininity

the child will have—and contributes to the forming of the conscience of the individual.

From the earliest years on, the child has sexual fantasies, ranging from theories of birth and of conception to relations between male and female. Of course, he reacts to his inner life by repressing, by acting out, with anxiety, with guilt, with shame—depending upon his past history and developmental relationships.

Parental attitudes are of great importance, for the infant and child is completely dependent upon his parents and is infected by their attitudes, whatever they may be—permissive, embarrassed, honest, long-winded and inappropriate, too educational and too soon, repressive or disgusted.

The little child is an exhibitionist and he takes great pleasure in displaying his body. In adults display becomes a perversion when not practiced according to the social code. Harsh restraining of the child's natural impulses to exhibitionism are often the foundation of overmodesty, shame or self-consciousness.

The child likes to look. With much pleasure he spends time looking, investigating anything and everything, especially his anatomy. After the age of five or six years he curtails this and feels shame at "peeping," as it is (by then) called. As long as peeping is transformed into social and culturally acceptable occupations like the scientific, artistic study of nude bodies or astronomy or bacteriology or animals, it is permissible and satisfying. Looking assumes its proper directions in life if no restrictions are placed directly on the desire to peep. There is no need to rebuke or punish the small child if he attempts to observe adults on the toilet or to look under girls' skirts. Gentle restraint and distraction are enough: ignoring is even better. This is not to recommend, though, that teachers smile grimly and gamely when an enterprising student attempts to peep—reproving not, diverting not, lest they cause ever so slight a psychic bruise. But it should be borne in mind that severe punishment leads to a suppression of peeping, of curiosity and in some cases to a later repudiation of any attempts to learn by looking. Let peeping continue without brutal reproach and it will eventually be transformed into socially acceptable channels which may vary from watching burlesque shows to more constructive forms of gratification. When curiosity is suppressed and the peeping becomes a gratifying sexual end in itself, the perversion *voyeurism* results.

All of us are cruel to a degree which is displayed in the desire to master and control, and in curiosity. After the age of about six years, the cruelty becomes transformed into sympathy and kindness. Sudden severe repression of natural desires to control and dominate may make a child afraid, may make him wish not to compete or not to control any situation lest he cause pain. Of course, one cannot allow a small child to be cruel, but an adult need not be cruel to him to make him kind. Aggressive activities and sports do wonders for natural aggressive impulses.

All little girls try to imitate boys; all wish at one time to be boys. Most of them renounce this wish and welcome femininity. Some girls from the earliest years display a fierce desire to be a boy. They will wear only blue jeans or cowboy suits, insist their hair be cut, or even pull out their hair, as did one three-year-old. "I'm a boy," they will say defiantly, and will even insist on a boy's name at times. In most instances the basis of this intense masculine wish seems to be due to the unwitting seductiveness of the male in the family and the patterning of the child after this male. In some instances, "hereditary factors" (which often means we don't really know) seem to be the cause. Such children usually need help in accepting femininity.

Older girls, strongly identified with father, may be quite aggressive and driving and reject a feminine role psychologically, even in marriage. For that matter, boys strongly identified with mother may be quite effeminate, which colors their later adjustment. Where interference with the ordinary course of sexual development is strong, homosexuality may develop in adolescence or adulthood.

Masturbation is common in children, most frequent between the ages of 3 and 6 years. It is transitory. Repressive or punitive attitudes, disgust and shame color the child's reaction and provoke anxiety and guilt and, in extreme cases, apprehension of danger to the genitals. In no area is the parents' attitude and management more important than in the developmental appearance of masturbation. Ignore and distract—that is the code for parents.

A child who has been seduced or sexually attacked presents a special problem, and the manner in which the problem is managed often helps determine the psychic result. Unnecessary dwelling on the episode, unnecessary genital examinations, punishment and dramatic emotional scenes have only a negative value. Where the result is sexual overstimulation or fright or anxiousness, special help may be required for the distressed child. Sexual seduction or attack is a traumatic experience which both stimulates and frightens the child.

As to sex education and parental attitudes: An honest, frank attitude; information given simply and when asked, and in terms appropriate to the age of the child—these are the golden rules. Well-meaning parents who grit their teeth and read books to their children when the parents think it is time, or those

who turn away questions with "You're too young," or those who surround sexual matters with mystery and badness hurt their children. Later those parents wonder why their children do not ask about sex. Something, they think, must be wrong. They should reflect that a child who does not ask, may be reticent because he already has some knowledge and has problems about what he knows. There are techniques of stimulating overt curiosity, and this depends on parental attitudes of honesty and matter-of-factness.

For some time now—the new era—some parents have steeled themselves and grimly paraded nude before their children. This with the notion that so doing will free the child of inhibitions or sexual taints. They should be advised that unlimited parental nudity can have both a stimulating and a frightening effect. (One nine-year-old girl developed a pronounced disturbance of sleep. She was sure a man was coming into her room. Her mother believed in free nudity. Poor father acquiesced. They paraded. All they did not do was to take the nine-year-old to bed with them—they took little sister instead. The elder child was looking for a man under her bed, like the proverbial fearful old maid—hoping.) Parents who leap into the closet lest their children see them undressed are as unnatural as the determined nude paraders. A reasonable degree of modesty and privacy will not be traumatic to the child or the parents. Sleeping in parents' room or in parents' bed is seductive, frightening and a fine way to initiate later problems, including sexual preoccupations and nightmares.

Perversions are not common in children but the groundwork for development of them later may be laid in childhood. Problems like transvestism, fetishism (which occurs only in boys) and homosexuality are difficult and complex in origin. Obscene words are not perversions. They indicate curiosity and daring, and where good taste and common sense prevail, there are no problems.

Symptoms like nailbiting, thumbsucking, tic and enuresis may be—although not in all cases—masturbation substitutes. There is ample clinical evidence to support this statement.

The child has a sexual life and its vicissitudes are colored by the reactions of the child, parents and society. A healthy sexual life begins in childhood. The groundwork for later difficulties also begins in childhood. The pediatrician having closest contact with child and parents has a golden opportunity to help prevent difficulties or guide to proper maturation.

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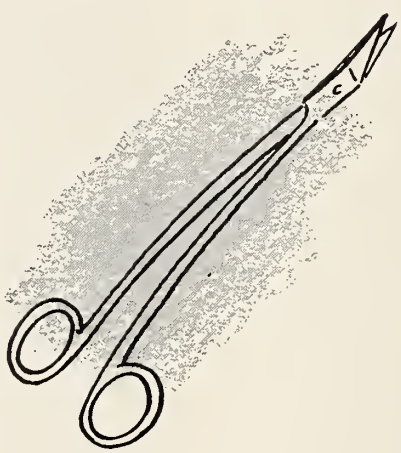

Control of Insecticide Exposure in Employment

A Guide to Physicians for Dealing with Organic Phosphates

IRMA WEST, *M.D., M.P.H.*, Berkeley

• Increasingly larger amounts of the highly efficient and highly toxic organic phosphate insecticides, particularly parathion, tetraethyl pyrophosphate, and Systox (demeton), are being applied on California's farms. These insecticides have become an economic necessity to agriculture. They can be used safely when rigid precautions are utilized and when medical supervision is provided for employees regularly working with these chemicals.

The demand for the services of physicians prepared to supply this kind of industrial medical supervision is expected to increase in California.

The basic procedures through which effective medical supervision can be provided are outlined.

PHYSICIANS in the rural areas of California are being called upon with increasing frequency to use their medical skills in the prevention of occupational disease as well as in its treatment. Today's technologic advances have placed within agriculture and allied industries an ever-increasing variety of valuable new chemicals, some of which present a formidable hazard when adequate safeguards are not employed.

Organic phosphate (phosphate ester) insecticides, with malathion a notable exception, are among the most hazardous materials yet used as pesticides. Parathion, TEPP (tetraethyl pyrophosphate), and Systox (demeton) are the highly toxic phosphate ester chemicals most widely used in California. It is in dealing with this group of insecticides that preventive medical services for employees are particularly valuable. The knowledge and experience gained by the physician who provides these services can be of considerable value to him in his practice. Phosphate and other insecticide problems are not confined to employees, although as a group they are subject to the most exposure. The careless handling of organic phosphate insecticides cost the lives of four children in California in 1954.[8]

The demand for the services of physicians to provide medical supervision for employed groups working with these insecticides is expected to increase. Not only are employers becoming more aware of the value of these programs, but the amounts of phosphate insecticides used in California are increasing rapidly.

In order to assist physicians who may be called upon to provide these services, there follows a short summary of information on organic phosphate poisoning, diagnosis and treatment, and an outline of the type of services which have been found to be of value in providing medical supervision for employees working with these materials.

Organic phosphate insecticides are esters of phosphoric acid and its derivatives. The only significant physiologic action they have is ability to inhibit or destroy the enzyme acetylcholinesterase. The signs and symptoms of poisoning are primarily the result of the intense stimulation which occurs when cholinesterase is insufficient to destroy acetylcholine accumulating in parasympathetic postganglionic fibers, in sympathetic ganglia, in the central nervous system and in myoneural junctions of striated muscle. The symptoms of parasympathetic stimulation (muscarinic effect) are most easily recognized and usually appear first.

These chemicals can be rapidly absorbed by any route, of which the skin is perhaps the most important. Organic phosphates are not skin irritants, so that usually no discomfort is noted while absorption is occurring. Inhalation of dusts and sprays can be hazardous. Contrary to popular belief, the phosphate ester insecticides either have a low degree of volatility or are so readily hydrolyzed that usually it is not the vapor given off which presents a problem. (The phosphate ester "nerve gases" are, however, highly volatile and have the same biological action as the phosphate insecticides.) On the basis of animal experimentation the minimum acute lethal oral dose of parathion and Systox (demeton) for man has been estimated at 12 to 20 mg.[6] Animal experiments indicate that TEPP may be somewhat more toxic than parathion.

Poisoning from these chemicals is an acute episode in which the patient is either dead or on the way to recovery in 24 to 48 hours. Sequelae are not expected. Chronic poisoning does not occur in the usual sense, although the effects of repeated smaller exposures to organic phosphates are cumulative when cholinesterase is destroyed faster than it can be regenerated. In these circumstances, the

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steadily declining level of cholinesterase activity produces no symptoms until the critical level is reached. Symptoms may then be noted suddenly after a small exposure.

Weakness, fatigue, giddiness, nausea and headache are usually among the first symptoms. The following train of symptoms and signs may be noted soon afterward (or they may be delayed): Abdominal cramps, blurred vision, miosis, lacrimation, profuse sweating, salivation, a feeling of constriction in the chest, difficult breathing, vomiting and diarrhea. In more severe poisoning, incoordination, mental confusion, oronasal frothing, drowsiness, fasciculations of voluntary muscles, loss of sphincter control, pulmonary edema, cyanosis, collapse, coma, convulsive seizures, respiratory failure and death can follow.

The most significant physical signs are a fixed miosis, excessive secretions and respiratory difficulty. The temperature is usually normal, the pulse is rapid and the blood pressure may be elevated. Increased bronchial secretions and bronchospasm will be evident upon examination of the chest.

The onset of symptoms of poisoning may be delayed, but is not to be expected more than 12 hours following exposure.[4] TEPP acts more rapidly than the other organic phosphate insecticides, and symptoms often appear shortly after significant exposure. A delay of several hours is more likely to occur after exposure to parathion or Systox.

DIAGNOSIS

Diagnosis is not difficult when the signs and symptoms just enumerated develop after exposure to a phosphate pesticide. Even when information concerning the patient's recent activities is not available, fixed miosis, greatly increased secretions, and respiratory difficulty in an acutely ill person are highly suggestive.

It is in the early stages or in milder cases of poisoning that the diagnosis may be more difficult. Conditions that have been confused with early or milder organic phosphate poisoning are: Heat stroke, asthma, respiratory infection and acute gastroenteritis. Several workers with acute poisoning have been hospitalized with tentative diagnosis of poliomyelitis. Poisoning from pilocarpine, from other parasympathomimetic drugs, and from the mushroom Amanita muscaria causes symptoms similar to those brought about by the phosphate anticholinesterase insecticides. (Fortunately, similar treatment is appropriate.)

It cannot be assumed that, just because a person works with organic phosphates, any illness which occurs is due to these chemicals; but it is always advisable to hold such a patient under close observation until poisoning can be ruled out.

It is important to distinguish between poisoning from organic phosphates and that from other toxic pesticides. There is a variety of potentially hazardous agricultural chemicals unrelated to the organic phosphate group and unrelated to each other in terms of toxicology and treatment of poisoning.

The label on the original container provides the most accurate information about the pesticide to which a person may have been exposed. Regardless of the many trade names under which pesticides may be marketed, their labels must state the chemical or common name of the active ingredient. The following are common and chemical names of the highly toxic organic phosphate pesticides used to any extent at present in California:

Parathion (diethyl p-nitrophenyl thionophosphate)

Methyl parathion (metacide) (dimethyl p-nitrophenyl thionophosphate)

TEPP (tetraethyl pyrophosphate)

Systox (demeton) (diethoxy thiophosphoric acid ester of 2-ethyl mercaptoethanol)

OMPA (octamethyl pyrophosphoramide)

EPN (ethyl p-nitrophenyl thionobenzene phosphonate)

(Malathion, chlorthion and dipterix are examples of newly developed organic phosphates of a much lesser degree of toxicity than those listed above. Trithion is a new phosphate pesticide of a moderate degree of toxicity. Thimet and phosdrin of high toxicity have also been recently introduced.)

The toxic organic phosphates are not marketed for household or garden use. A permit to purchase and apply them must be obtained from the County Agricultural Commissioner. His office may be able to provide information regarding the identity of a pesticide to which a patient may have been exposed.

Plasma and red cell cholinesterase activity determinations should be done for anyone in whom symptoms from exposure to organic phosphates are suspected. These tests are not only useful in confirming a diagnosis, but are necessary in order to advise a patient who works with these materials. Until cholinesterase has regenerated, he is particularly vulnerable to further exposure. The physician usually cannot wait for the result of the test before beginning treatment, however.

TREATMENT

Acute poisoning from phosphate ester pesticides is an extreme medical emergency. Lethal doses of these chemicals can be counteracted when treatment is applied early and vigorously.[1] Atropine is the physiological antidote. It acts by blocking the action of excessive acetylcholine. The dose, route and interval between injections is determined by what is necessary to keep the patient mildly atropinized for

the duration of symptoms. Repeated doses of atropine, much larger than the usual therapeutic amount, are required in acute poisoning and the intravenous route is recommended. For severe symptoms in adults, an initial dose of as much as 4 to 6 mg. of atropine sulfate is indicated. Maintenance doses of 2 mg. may be necessary at hourly or shorter intervals. For moderate symptoms an initial dose of 2 mg. is recommended, with lesser maintenance doses as required.[3] Favorable response to one or more injections of atropine does not guarantee recovery. Treatment must be continued throughout the emergency. However, the need for atropine after 48 hours is not usually expected. Contraindicated are theophylline, aminophylline, chlorotheophylline and morphine.[6]

When a severely poisoned patient is cyanotic, artificial respiration, preferably by mechanical means, should be started first and atropine given as soon as cyanosis is overcome.[6]

The patient should be decontaminated quickly by removal of clothing and bathing with soap and water to which soda or mild alkali has been added if available. The person carrying this out should wear gloves and the contaminated clothing should not be handled or shaken out. Gastric lavage is indicated if there is any indication that the insecticide has been ingested. The patient must be observed constantly. Equipment for artificial respiration and oxygen administration should be at the bedside. The need for it may arise suddenly.

Excessive bronchial secretions should be removed by whatever methods are appropriate—postural drainage, aspiration with a catheter and syringe, endotracheal intubation or tracheotomy. Giving fluids intravenously is contraindicated while there is excessive fluid in the respiratory tract.

Continuous observation and appropriate amounts of atropine are also important for patients with milder symptoms. It is not possible to predict whether more serious symptoms will follow. It is not safe to administer atropine and permit the patient to go home. Persons with no symptoms but who may have had significant exposure should be examined and held where they can be observed.

The minimum lethal dose of atropine has been reported as about 10 to 20 mg. for children and 30 to 130 mg. for adults.[3] Rarely, sensitivity to smaller doses has been reported. There is a good margin of safety between the therapeutic dose for organic phosphate poisoning and the fatal dose.[3] Persons with this kind of poisoning have an increased tolerance for atropine.

Atropine can precipitate an incipient glaucoma. Therefore, if suspicious symptoms referable to the eyes develop following treatment for organic phosphate poisoning, the patient should be seen by an ophthalmologist.

Atropine has no significant effect on cholinesterase activity and does not affect the validity of laboratory tests. By blocking the action of acetylcholine, atropine can control most of the symptoms of poisoning. It is not a specific chemical antidote acting to free the cholinesterase chemically inactivated by the phosphate ester pesticide.

Reports of recent experimental work indicate that specific antidotes may soon be developed, but none are as yet ready for use in the treatment of human poisoning.

CHOLINESTERASE ACTIVITY DETERMINATION

There are several methods by which cholinesterase activity can be determined. The basis for most techniques is the direct or indirect measurement of the acetic acid liberated in a system where the cholinesterase in a known amount of ced cells or plasma hydrolyzes acetylcholine, which has been added in excess. Cholinesterase hydrolyzes acetylcholine to acetic acid and choline. The amount of acetic acid liberated will depend upon the concentration of red cell or plasma cholinesterase.

The Michel electrometric method, particularly the modification which permits the use of fingertip blood, is the most widely used technique. This method provides a practical combination of simplicity with a reasonable degree of accuracy. A potentiometer is used to measure the lowering of pH produced by the liberated acetic acid. The results are reported in Δ pH units per hour. Reliability of duplicate determinations of the same specimen should be within 15 per cent.[5]

The normal range for plasma is about 0.41 to 1.65 Δ pH units with an average of 0.91 Δ pH units. The normal range for red cells is 0.55 to 1.25 Δ pH units with an average of 0.86 Δ pH units.[7] A person with no exposure to anticholinesterase chemicals shows a fairly constant cholinesterase activity with somewhat more variation in plasma values than in red cell values. However, there may be wide disparity of cholinesterase activity between one unexposed person and another, which can be considered normal. Therefore, in the medical supervision of employed groups using phosphate insecticides, it is more accurate to base interpretation of each employee's periodic cholinesterase tests on his own normal values as determined before exposure to these chemicals.

On the basis of what is known about the reliability of the laboratory procedure and the variation in cholinesterase activity inherent in the individual,[2,5,7] an arbitrary estimate of significance can be made when red cell or plasma cholinesterase drops to less

than 75 per cent of the individual's pre-exposure value. When the pre-exposure or baseline value is not known, a decrease in red cell or plasma cholinesterase to 60 or 70 per cent of the average for the general population may be looked upon as suspicious. A fairly well established practical standard for determining when a person should be removed from exposure to phosphate ester pesticides is a decrease of either plasma or red cell cholinesterase activity to 50 per cent of "normal," based preferably on the individual's normal value. He should not return to exposure to organic phosphate pesticides until both plasma and red cell cholinesterase have increased to above 75 per cent of his normal. Phosphate poisoning can fairly well be ruled out if red cell cholinesterase is above 50 per cent of the individual's normal or if subsequent serial tests do not show that a decrease of this magnitude has occurred. Symptoms usually do not appear until red cell cholinesterase has dropped to between 25 and 50 per cent of normal. In fatal poisoning, pronounced cholinesterase inhibition (0 to 10 per cent of normal) is the only specific finding.[4]

Plasma cholinesterase is a nonspecific enzyme; that is, it hydrolyzes certain other esters of choline. It is a more sensitive indicator of absorption of organic phosphate chemicals and is reduced earlier than the specific cholinesterase in the red cells. Plasma cholinesterase activity bears no relationship to the cholinesterase of the nervous system, and is affected by certain other chemicals and conditions, notably reduced liver function. Red cell cholinesterase is specific for acetylcholine and bears a relationship to the nervous system enzyme. It is, therefore, an indicator of more serious inhibition and is related to actual signs and symptoms of poisoning. Plasma cholinesterase may be reduced to zero without symptoms, provided the red cell cholinesterase has not dropped to the critical level. However, it is more often the case that red cell cholinesterase also is considerably diminished when plasma values are low. Determining both plasma and red cell cholinesterase provides two kinds of information—one kind helpful in assessing exposure early, and the other in indicating extent of exposure.

In man, it takes about three weeks for plasma cholinesterase activity to recover from zero to normal. Red cell cholinesterase recovers more slowly. At present, there is no method known for speeding up the natural recovery process.

SUPERVISION OF EXPOSED PERSONS

The preventive medical services which a physician provides to a group of employees at the request of their employer are particularly valuable when the physician becomes well acquainted with the nature and details of the work that the employees do. The fundamental purpose of this type of medical program is to provide a continuing check on the effectiveness of the protective equipment and work methods which are used to prevent exposure to phosphate pesticides.

Although medical supervision is always indicated where employees are regularly using hazardous materials, it has perhaps more to offer where there is exposure to organic phosphates. There are not many of the acutely toxic chemicals used in industry for which there is available both a laboratory test which can help detect excessive exposure before illness appears, and an effective antidote to combat poisoning should an accident occur in spite of all precautions. For employees working with these chemicals, the availability of adequate treatment of poisoning is greatly enhanced when there is a physician who knows the work situation and has made preparations to meet an emergency.

The cost of the medical program is a necessary expense of operation where hazardous materials are used in employment, and is, of course, assumed by the employer.

Although the needs and circumstances of employed groups differ and the approaches to providing medical supervision of them may vary, there are certain basic procedures: They are of two kinds: Procedures requiring particular attention when the program is initiated, and procedures that are carried out on a continuing basis.

Initial Procedures: It is desirable that each employee have a physical examination and that a complete medical and occupational history be taken. Workers who handle hazardous materials regularly should be in good physical condition. The initial examination provides the physician with an excellent opportunity for informing the employee of the nature of the hazard in his work.

Cholinesterase activity determinations for both plasma and red cells should be done on at least two different occasions to establish the normal level for each employee at a time when he has had no exposure to phosphate ester insecticides for three weeks, preferably longer. Where a local laboratory does not regularly perform these tests but is interested in doing so, it can obtain expert advice on the subject from the Industrial Hygiene Laboratory of the State Health Department. A list of laboratories in California known to be prepared to carry out these tests is available on request from the same source.

Prearrangements for managing acute poisoning should be made so that no time will be lost in administering first aid and medical treatment. The physician should carry an ample supply of injectable atropine in his emergency bag. Further, the physi-

cian can provide the employer with instructions on first aid. A copy of these instructions can be given to each employee and posted at the places of work. The physician can designate an alternate or a panel of physicians to be called when he cannot he reached. Because serious symptoms of poisoning may not develop until several hours after exposure, each employee should carry with him the name and phone numbers of the physicians in case he becomes ill while away from work.

Whether or not employees should carry atropine is a matter requiring considered medical judgment. The situation differs among employed groups, both with regard to the distance from medical care and the willingness of the workers to follow instructions. Two tablets of atropine (0.6 mg. each) can temporarily cover up early symptoms of poisoning and give a false sense of security. There may then be a delay in obtaining medical care and, in some instances, the employee may go back to more work with the insecticide. In acute poisoning, oral administration of atropine is of little assistance because of the attendant nausea and vomiting, and the need for larger doses parenterally.

In certain circumstances, letting the worker have atropine to keep on hand for use if needed may help the physician in the differential diagnosis between milder phosphate insecticide poisoning and other conditions. Employees can be instructed to take one or two atropine tablets when any symptoms develop which could be due to these insecticides, and to report to the physician at once. If the patient shows the effects normally expected of atropine, this fact is a point of evidence against poisoning. If, on the other hand, the usual effects of atropine are absent, this is evidence for phosphate insecticide poisoning.

Taking atropine as a prophylactic measure is not recommended.

Continuing Procedures: Cholinesterase activity determinations for plasma and red cells should be carried out periodically for employees while they are regularly exposed to organic phosphate insecticides. The optimum interval for these tests can best be determined by experience with the employed group in question. Intervals of one week or less may he appropriate when exposure is considerable. Where controls are operating well, or smaller amounts of insecticide are being handled, two or three week intervals may be adequate. The period between tests may be different among individuals within the same group of employees.

The cholinesterase activity determinations are of most value when they are carried out and the results reported to the physician within a day of the time the group of workers appears for the tests. It is desirable that the initial report include the method used and that all reports give the numerical results and the per cent of the individual's baseline value that each result represents. The date and time the blood was drawn should also appear.

In general the interpretation is the same regardless of which of the phosphate ester chemicals or mixture of them is being used. Experienced physicians have worked out various methods of determining at what cut-off levels of cholinesterase activity employees should be removed from exposure or returned to work. However, until a physician gains experience he may be at a loss as to where to start. For this reason, the following scheme is suggested, although it may not prove to be the optimum for some groups:

Satisfactory: When *both* plasma and red cell cholinesterase activity are 75 per cent or more of the individual's baseline value.

Caution—Showing significant exposure: When *either* plasma or red cell cholinesterase activity drops to 50 to 74 per cent of the baseline value.

Stop work with phosphate insecticides: When *either* plasma or red cell cholinesterase activity drops to below 50 per cent.

Back to usual work: When *both* plasma and red cell cholinesterase activity have risen to 75 per cent or above the individual's baseline value.

A running graph kept for each employee, on which is plotted the results of the periodic cholinesterase tests is a useful device for visualizing trends. Other pertinent events can be included on the graph.

The report to the employer can include the above categories and the names of the employees falling in each, together with any recommendations about the working situation the physician feels are warranted.

When red cell cholinesterase values fall below 50 per cent, it is desirable for the laboratory to report by phone to the physician and for the physician to notify the employer and the employee as soon as possible. Further exposure is hazardous and the worker should be examined by the physician for signs and symptoms of poisoning. It is desirable for future reference to take the opportunity to discover at what level of cholinesterase inhibition the worker shows signs or symptoms. (Miosis and possibly wheezing may be either a local or a systemic effect. If only a local effect, the cholinesterase activity will not be significantly low.)

The workers should, of course, be instructed to report to the physician when any signs or symptoms appear which could be due to phosphate chemicals, or if there is any question of having received a significant exposure.

California State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

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CASE REPORTS

Giant Diverticulum of the Bladder with Gastrointestinal Manifestations

JOSEPH J. KAUFMAN, *M.D.*, and
HAROLD MILLS, *M.D.*, Los Angeles

IT IS WELL RECOGNIZED that a variety of conditions arising in the urinary tract may become manifest only by production of abdominal or gastrointestinal symptoms. Diverticula of the urinary bladder frequently develop without causing typical symptoms, and are discovered in the course of urological investigation done because of symptoms of lower urinary tract obstruction. In the following case a giant diverticulum of the bladder was not associated with complaints referable to the urinary tract and the clinical and roentgenographic observations were confusing.

REPORT OF A CASE

A 70-year-old white businessman consulted a physician because of long-standing mild constipation. X-ray studies of the upper gastrointestinal tract showed upward displacement of the small bowel and descending colon by a large mass arising in the pelvis and left lower quadrant of the abdomen (Figure 1). An intravenous urogram showed a large, round, "ground-glass" density occupying the entire left lower quadrant of the abdomen. Normal renal function without dilatation of the upper urinary tracts was observed. However, the mid-ureters were spread laterally and the left ureter was displaced posteriorly (Figure 2). Upon inquiry the patient said that nocturia (once nightly) and occasional hesitancy of micturition had been present for 30 years. Questioning elicited no other symptoms suggesting obstructive uropathy.

The abdomen was moderately protuberant. There were no palpable abdominal masses but suprapubic dullness extended over the left lower quadrant to the flank. On rectal palpation, the prostate was noted to be symmetrically enlarged (grade 1½ in range of 1 to 4). It was of soft consistency and regular outline. The consensus of several medical and surgical opinions was that the patient had a retroperitoneal tumor and that exploratory operation was indicated. One general surgeon suggested the possibility of a dilated bladder and requested urological consultation before operation. To a urologist, the x-ray films and the physical symptoms suggested at once the likelihood of distention of the bladder or a large diverticulum of the bladder or both. A catheter was inserted for evacuation of residual urine and 1,000 cc. of clear urine was withdrawn. Further decompression of the bladder was carried out by releasing 100 cc. of urine through the indwelling catheter every hour. Six and a half liters of urine was removed in a period of 48 hours. For cystography, 1,200 cc. of 10 per cent Urokon® was injected (without causing any sensation of bladder fullness) and the roentgenogram showed a huge diverticulum arising from the left lateral wall of the bladder (Figure 3).

Figure 1.—G.I. series illustrating large bilobular pelvic mass displacing small bowel and descending colon.

On June 30, 1955, cystoscopy was performed under spinal anesthesia and grade 2 (range, 1 to 4) trabeculation of the bladder was observed. A diverticular orifice was seen on the left lateral wall of the bladder approximately 4 cm. above the left ureteral orifice. The prostate was enlarged intra-urethrally,

From Cedars of Lebanon Hospital, Los Angeles 29.

Figure 2.—Intravenous urogram illustrating "ground glass" density occupying left lower quadrant and spreading the ureters.

Figure 3.—Cystogram revealing giant bladder diverticulum corresponding in size and shape to filling defects noted in Figure 1.

grade 1½. Immediately following cystoscopy, diverticulectomy and suprapubic cystoscopy were carried out through a transverse lower abdominal incision extending from the midline to the left flank. The diverticulum, about 15 cm. in diameter (Figure 4), was easily mobilized by dissecting its delicate attachments to the peritoneum and left retroperitoneal area. The diverticular orifice was 3 cm. in diameter. After severing the neck of the diverticulum, the bladder opening was closed in two layers. A midline suprapubic cystostomy was established for postoperative drainage and the patient had uneventful recovery. The diverticulum, when filled, was 17 x 13 x 13 cm.

Five weeks after operation, a cystogram was made. The bladder capacity was 200 cc. (Figure 5).

Transurethral resection of the prostate was carried out August 17, 1955, and 21 gm. of prostatic tissue showing prostatic hyperplasia and prostatitis were removed. The patient made a satisfactory recovery after transurethral prostatic resection. The suprapubic tube was removed on the first postoperative day. Residual urine in the bladder, as determined several times postoperatively, was less than 30 cc.

Figure 4.—View of diverticulum delivered through extraperitoneal abdominal incision.

DISCUSSION

Bladder diverticula probably occur more frequently than is generally recognized. They exist in 10 per cent of men with infravesical obstruction.[2] There are no symptoms which are pathognomonic of the presence of bladder diverticula. Occasionally "installment voiding" or the presence of a large amount of residual urine, often infected, suggest the presence of a diverticulum.

In the case presented, although the bladder diverticulum was among the largest recorded in the literature[1] it caused no urinary symptoms and only minimal symptoms referable to the bowel. The chief point of interest is the diagnostic confusion caused by the preliminary x-ray films of the bowel and upper urinary tracts.

In the male, a smooth mass arising from the pelvis and extending upward in the midline or to one side, should suggest the possibility of a dilated bladder or diverticulum. A "ground-glass" appearance and smooth contour are further points indicative of a cystic mass of this type. Certainly because of its relative frequency compared to primary retroperitoneal tumors, bladder diverticulum should be considered first in any retroperitoneal mass displacing bowel and seeming to arise from the pelvis.

Figure 5.—Postoperative cystogram.

The absence of urinary symptoms may be misleading but should not eliminate a presumptive diagnosis of bladder diverticulum. Definitive diagnosis is readily made by inserting a catheter to void residual urine and making a cystogram. The demonstration of a benign condition, such as bladder diverticulum, so readily accomplished, can greatly relieve a physician and a patient concerned about the possibility of a retroperitoneal neoplasm.

SUMMARY

A case of a giant bladder diverticulum causing confusing clinical symptoms is presented. Mild gastrointestinal manifestations were the only presenting complaints of a patient with a large lower abdominal mass displacing the small bowel and descending colon as well as the left ureter. Although the presumptive diagnosis by competent medical and surgical consultants was a primary retroperitoneal tumor, the correct diagnosis was fortunately made preoperatively by catheterizing the patient for residual urine and making a cystogram.

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Sarcoidosis and Renal Insufficiency Resembling Hyperparathyroidism

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In at least six reported cases, patients with hypercalcemic renal insufficiency due to sarcoidosis have had exploratory operation because hyperparathyroidism was suspected.[1,3,8,13] Contrariwise, adenomatous hyperparathyroidism has been reported to simulate sarcoidosis.[12]

In the case reported herewith, the patient had sarcoidosis, with hypercalcemia and nephrocalcinosis, as well as advanced arteriolar nephrosclerosis and chronic rheumatic heart disease with aortic stenosis.

REPORT OF A CASE

In January, 1953, a white woman 72 years of age was observed because of generalized itching and a decrease of 28 pounds in body weight in a period of three years. Progressive weakness and mental confusion had recently precluded her living alone.

When 18 years of age, the patient had had tonsillitis with subsequent ill-defined inflammation of the left lower leg. A few years later she had taken iodine because of an enlarged thyroid gland.

From the Fisher-Hauch Medical Clinic, Pomona, California, and the University of Southern California School of Medicine, Los Angeles.

Submitted September 21, 1956.

In October 1952 (at another hospital) soft tissue calcification was removed from the region of the right shoulder.

The patient was admitted to the Pomona Valley Community Hospital, and upon physical examination was observed to be thin, pale, weak and lethargic. The body weight was 100 pounds. In addition to almost total deafness, the sensorium was clouded and there was a uriniferous odor to the breath. The patient chuckled and mumbled incoherently. Ocular fundi were normal. The thyroid gland was multinodular. It was enlarged, more on the right than the left. Fine moist rales were audible throughout the lung fields. A systolic thrill was palpable over the aortic area, and a loud harsh systolic murmur along the left sternal border was transmitted to the neck. The blood pressure was 150/100 mm. of mercury and the pulse was regular at 80 beats per minute. The results of neurological examination were within normal limits.

Results of urine, hematologic and chemical studies during 1953 and 1954 are shown in the accompanying table. An electrocardiogram was within normal limits. Although the bone marrow was hypocellular, the condition of it was not such as to permit specific diagnosis.

Roentgenograms of the chest and abdomen showed left ventricular enlargement, osteoporosis of the ribs, two huge calculi in the gallbladder, a calculus in the right kidney and flocculent calcifications in the pelvis. Periarticular calcifications of the right

Laboratory Data in a Case of Sarcoidosis and Renal Insufficiency

	January to February 1953 Preoperative	March 1953 to June 1954 Postoperative	August 1954 Terminal Illness
Urine:			
Specific gravity	1.011	1.012	1.011
Albumin	2+	Trace	4+
Sugar	0	0	0
Erythrocytes per high power field	50 to 60	Occult positive	50 to 60
Leukocytes per high power field	3 to 5	10	40 to 50
Miscellaneous	Sulkowitch (normal range)	Crystals — Calcium oxalate; Bence-Jones protein negative.	Culture—E. coli; stone passed of oxalates and phosphates.
Hemoglobin (gm. per 100 cc.)	9.2	9.2	6.0
Hematocrit (per cent)	28	33	.....
Erythrocytes (million)	3.27	2.98	.....
Leukocytes (per cu. mm.)	6200	5400	9900
Lymphocytes (per cent)	28	16	8
Segmented neutrophils (per cent)	65	65	78
Banded forms (per cent)	2	9	12
Eosinophils (per cent)	5	10	2
Sedimentation rate (Westergren) mm./hr.	119	110	.....
Urea nitrogen (mg. per 100 cc.)	65	71	56
Creatinine (mg. per 100 cc.)	3.5	3.2	7.3
Calcium (mg. per 100 cc.)	14.8	12	10
Phosphorus (mg. per 100 cc.)	5.3	5.8	6.5
Alkaline phosphatase (Bodansky units)	3	4.1	1.0
Total protein (gm. per 100 cc.)	7.1	6.8	7.7
Albumin (gm. per 100 cc.)	3.2	3.2	4.0
Globulin (gm. per 100 cc.)	3.9	3.6	3.7
Albumin-globulin ratio	0:82	0:88	1:3
Miscellaneous	Protein-bound iodine: 5.5 micrograms per 100 cc.	Thyroid tissue negative for acid-fast bacilli; tissue extract from node of neck negative for tuberculosis in guinea pig.	Platelets 254,250; bromsulfalein dye retention 0.3%; prothrombin time normal.

shoulder, neck of the left radius, hip joints, distal interphalangeal joint of the right index finger and head of the left second metatarsal, as well as calcification of the thyroid gland, and osteoporosis of spine and pelvis were visualized roentgenographically.

The working diagnosis was hyperparathyroidism with pyelonephritis and renal insufficiency.

On February 23, 1953, surgical exploration of the neck failed to reveal parathyroid disease. Subtotal thyroidectomy, right inferior parathyroidectomy and removal of four cervical lymph nodes were carried out. The parathyroid gland, which measured 6x4x4 mm., was removed in the knowledge that adenomas may occur without appreciable increase in size of the gland and that hyperparathyroidism secondary to renal insufficiency might reveal hyperplasia. The pathologist reported fetal adenoma and calcification of the thyroid gland, normal parathyroid gland (Figure 1), and sarcoid reaction with asteroid bodies in lymph nodes.

Although the latter may be considered as a local reaction to chronic thyroid disease,[5] the hyperglobulinemia, hypercalcemia, renal calculi and metastatic calcification were best explained on the basis of sarcoidosis. Hypercalcemia was considered to be of pathogenic significance in the renal disease in this case.

For 18 months after operation, the patient did fairly well on a high fluid and low calcium and phosphorus diet. Weakness and pruritus were only slightly bothersome and she resumed living alone and managing her affairs. The blood pressure fluctuated between 140/90 and 180/110 mm. of mercury. Fine moist rales and the harsh, loud systolic heart murmur persisted.

Figure 1.—Parathyroid gland removed at operation, February, 1953, reveals normal structure (×125).

In June, 1954, massive hematemesis and melena occurred. The patient collapsed and could not summon medical aid for eight hours. Upon admittance to hospital the hemoglobin content of the blood was 3.8 gm. per 100 cc., the hematocrit 13 per cent. Erythrocytes numbered 1.3 million per cu. mm. The

patient received 3,500 cc. of blood. No abnormality was observed in a roentgenogram of the upper gastrointestinal tract.

In July, dependent edema and coarse moist rales developed. Administration of digitalis and mercurial compounds and restriction of sodium intake brought about no change. Pulmonary congestion, as well as cardiac enlargement, was evident on a roentgenogram of the chest. The patient died with severe anasarca in September, 1954.

At autopsy nephrocalcinosis, nephrolithiasis, arteriolar nephrosclerosis, chronic pyelonephritis, chronic rheumatic heart disease with aortic stenosis and cardiomegaly and sarcoidosis of lymph nodes and lungs were noted. Metastatic calcification was also apparent in lymph nodes and connective tissue of the neck. Careful search in the neck and thorax failed to reveal a parathyroid adenoma. Giant cells of the sarcoid lesions contained both asteroid and Schaumann bodies (Figure 2).

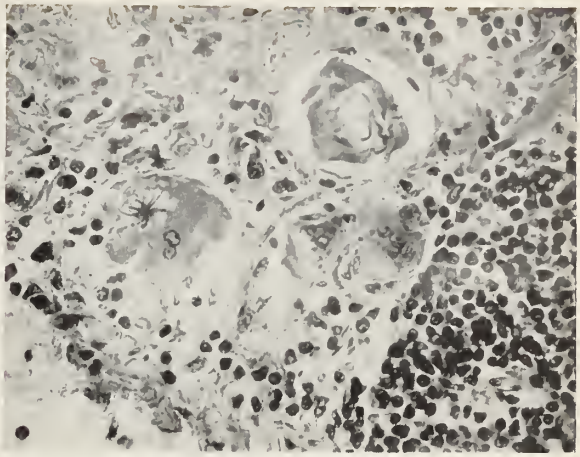

Figure 2.—Lymph node revealing sarcoid lesion with Schaumann body and giant cell containing asteroid (×500).

DISCUSSION

Renal insufficiency in the present case was considered a result of arteriolar nephrosclerosis and hypercalcemia. Sarcoidosis has been reported to bring about renal insufficiency in four ways: (1) by glomerulonephritis with hyalinosis as in other hyperglobulinemias;[15] (2) by displacement of renal parenchyma by invasive granulomas;[2] (3) by granulomatous periarteritis;[11,14] and (4) by hypercalcemia with nephrocalcinosis and calculi.[4,6,8,13] In the present case, evidence of the first three phenomena was absent.

Renal insufficiency secondary to sarcoidosis, hyperparathyroidism and hypervitaminosis D is attributed to hypercalcemia. Clinical characteristics of such renal insufficiency are reported to differ from those of the usual type of chronic nephritis, for hypertension, cardiac enlargement, retinopathic change, peripheral edema and anemia are usually absent.[8,9] The patient in the present case had hypertension, anemia, cardiac enlargement and terminal edema, which may be at least partly explained on the basis of aortic stenosis. Arteriolar nephrosclerosis and hypercalcemia probably both contributed to the patient's severe renal insufficiency. Uremia seems the most likely cause of the gastrointestinal hemorrhage with which terminal illness began.

Hyperphosphatemia has been recently reported in five patients with sarcoidosis,[3,10,13] three of whom had azotemia. Autopsy in three of those cases, and in the present case as well, confirmed renal lithiatic disease with metastatic calcifications. Hyperglobulinemia and hyperphosphatemia should help differentiate sarcoidosis with renal insufficiency from hyperparathyroidism.[3] Elevated serum globulin and negative history aid in excluding hypervitaminosis D.

Recent evidence suggests that the hypercalcemia of sarcoidosis is due to excessive endogenous production of vitamin D-like substances, which increase the absorption of calcium from the gastrointestinal tract.[7]

SUMMARY

A 72-year-old white woman with symptoms of uremia and hypertension also had hyperglobulinemia, hypercalcemia, hyperphosphatemia, metastatic calcification, nephrolithiasis and aortic stenosis. Surgical exploration of the neck failed to reveal parathyroid gland disease.

Autopsy 18 months later revealed sarcoidosis of lymph nodes and lungs, pyelonephritis, arteriolar nephrosclerosis, nephrocalcinosis, nephrolithiasis and chronic rheumatic heart disease with aortic stenosis.

The evidence suggested that hypercalcemia of sarcoidosis and arteriolar nephrosclerosis were jointly responsible for the patient's advanced renal insufficiency.

Hyperglobulinemia and hyperphosphatemia are the two most valuable, though not infallible, laboratory findings to differentiate sarcoidosis from primary hyperparathyroidism.

So far as could be determined this is the seventh reported case of hypercalcemic renal insufficiency with sarcoidosis in which primary hyperparathyroidism was suspected but not found at surgical or postmortem examinations.

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Tissue Destruction and Death from Microwave Radiation (Radar)

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THE TERM *microwave* is popularly used to designate a certain range of waves in the radio frequency spectrum, including frequencies from approximately 1,000 mc. (megacycles) per second to 30,000 mc. per second or higher. Expressed in wavelength, this spectrum is from 30 cm. to 1 cm. or less. Microwaves are usually produced by means of specially constructed tubes such as the magnetron and klystron. *Radar* is a term coined for military apparatus using microwaves of this kind.

Previously reported work has emphasized the potential hazards of absorption of microwaves by body tissues. It has been reported that totally absorbed energy of 100 to 1,000 watts will cause intolerable temperature values.[7] The relationship of absorbed energy and energy flux is dependent upon the reflective coefficient of the surface of the human body.[8] There are many variables such as the radiant frequency, the amount of skin, the amount of subcutaneous fat and the temperature of such tissues. Investigation has not proceeded to the point at which it is possible to state tolerance levels in terms of radiant power, but currently 0.01 watt per square centimeter is the recommended tolerance level.

Penetration is to some extent a function of frequency, and one of the advantages of microwave diathermy is that deeper tissues can be heated more efficiently. Likewise, wavelengths of 30 to 50 cm. will give greater depth of penetration with more efficiency than 12 cm. radiation.

Cellular injury or death occurs when tissue temperature is maintained at 5°C. above the normal blood temperature. Tissue temperature even a few degrees above normal body temperature is dangerous. Irreversibility depends upon the duration of the hyperthermic episode. The higher the temperature, the shorter the time necessary to cause cell death. Tissues respond to heat denaturation with an aseptic inflammatory reaction and subsequently are prone to infection. Local temperatures of 64°C. will cause tissue necrosis and gangrene at the site. Such temperature elevations have been brought about in the hollow intestinal organs of animals and in an excised eye with 12.5 cm. microwave radiation at a power of 100 watts.

Not all areas of the body are equally well equipped with mechanisms for regulating their temperature by means of a change in flow of blood. The chambers of the eye and the contents of the hollow viscera, such as the gallbladder, urinary bladder and lumen of the gastrointestinal tract are relatively avascular and largely devoid of effective mechanisms for regulation of temperature. Temperature increase in living tissues and organisms during exposure to high frequency electromagnetic waves depends upon at least four factors: (1) Specific areas exposed and the efficiency of the heat eliminating mechanism; (2) intensity of radiation; (3) duration of the exposure; (4) specific frequency of the radiation. Hines and Randall[4] made a study of changes in temperature in various areas of rabbits during irradiation with electromagnetic waves (Table 1). It was noted, that whereas the visceral temperatures were elevated, the oral and rectal temperatures remained within normal limits. The elevation was particularly pronounced in the relatively avascular hollow viscera. In these experiments, when only the abdomen was irradiated, it appeared that death was preceded by a syndrome resembling that noted in burns and traumatic shock.

TABLE 1.—*Changes in Temperature in Various Areas of Rabbits During Irradiation with Electromagnetic Waves*[4]

Region	Times in Minutes: 1	2	3	10	20	30
	Temperature change in degrees C.					
Ileum	—4.2	....	14.4	29.5	38.5	42.9
Stomach	1.8	3.4	5.4	....	19.2	23.1
Gallbladder	....	0.1	0.3	1.8	4.0	6.3
Urinary bladder	1.3	2.1	3.0	5.6	....	9.7
Rectal	0.1	....	0.1	0.2	....	0.8
Oral	—0.2	....	0.2	—0.5	—0.9	—1.2

Submitted September 13, 1956.

Boyle and co-workers[1] expressed belief that the heat from microwaves is due mainly to the dipolarity of water—that in blood 80 per cent of the heat is the result of dipolar effect and 20 per cent of ionic conductance. In the penetration of water the energy delivered at a depth of 2.5 cm. was 10 per cent of the emitted energy. The penetration was better in living tissue because of its homogenicity. The temperature rise was greater in hollow viscera ordinarily having a liquid content than it was in other hollow viscera.

Imig and Hines[5] noted that in testicular degeneration due to heat, the greatest damage was to the mucosa and extended outward from the mucosal surface.

Oldendorf[6] used 12.5 cm. microwave radiation to destroy brain tissue selectively in rabbits without apparent evidence of a burn on the skin.

The following is a report of a case in which the patient died from tissue destruction caused by absorption of microwave energy.

CASE REPORT

A 42-year-old white man, while working, stood directly in the beam of a radar transmitter, within ten feet of the antenna. In a few seconds he had a sensation of heat in the abdomen. The heat became intolerable in less than a minute and he moved away from the antenna. Within 30 minutes he had acute abdominal pain and vomited. When medically examined, an hour after the exposure, he was in a state of mild shock. The blood pressure was 90/30 mm. of mercury and the radial pulse rate 72 with auricular fibrillation.

Upon abdominal examination generalized acute tenderness was noted, with decided muscle spasm and rebound tenderness. There were no peristaltic sounds. Leukocytes numbered 10,300 per cu. mm. —82 per cent neutrophils, 5 per cent eosinophils, 10 per cent lymphocytes and 3 per cent monocytes.

In an x-ray film of the abdomen, there was no evidence of free air under the diaphragm. A specimen of urine was unobtainable.

The patient denied any history of symptoms suggestive of gastric disease. He had had rheumatic endocarditis in childhood and had had a mitral commissurotomy one year previously. Since the cardiac operation the patient had been taking digitalis. Whether he had had fibrillating before the present episode was not known.

The patient was immediately admitted to hospital. Additional x-ray films did not show free air in the peritoneal cavity. The stomach was greatly distended and there was a small amount of gas in the colon, pooled in the cecum and ascending colon. The general appearance of the abdomen was considered consistent with acute peritonitis. X-ray films of the chest showed considerable cardiac enlargement with elevation of the left diaphragm.

Leukocytes numbered 15,700 per cu. mm.—90 per cent segmented forms, 5 per cent stab cells and 5 per cent lymphocytes. The urine showed traces of bile. Serum amylase was 170 units on one occasion (normal, less than 180) and 161 units on another. The direct serum bilirubin was 0.02 mg. per 100 cc. (normal 0.02 or less) and the total was 1.2 mg. per 100 cc. (normal less than 1 mg.).

Diagnostic possibilities considered were mesenteric embolus or thrombosis, or a perforated peptic ulcer. The patient was prepared with fluids and other supportive measures, and operation was done six hours after the onset of pain.

The peritoneum contained approximately 500 cc. of serosanguinous fluid, which proved to be sterile. The entire parietal and visceral peritoneum were dusky red and the portion of the small bowel that could be seen was beefy in color. All visible surfaces were covered with petechiae approximately 1 mm. in diameter. The appendix appeared gangrenous. It was removed. The patient did reasonably well after operation. The abdomen was continually decompressed and on the fourth day after operation, peristaltic action apparently having begun, fluids were given by mouth. On the fifth postoperative day, diarrhea and abdominal distention occurred. Chloramphenicol was substituted for the previously prescribed tetracycline but diarrhea persisted. Tests of stool specimens taken the fifth day and sixth postoperative day were negative for occult blood and E. coli grew on culture.

On the sixth postoperative day leukocytes numbered 17,000 per cu. mm. of blood—85 per cent segmented forms, 7 per cent stab cells and 5 per cent lymphocytes. The platelets numbered 156,000 per cu. mm. and it was impossible to get clot formation for clot retraction measurement. The serum potassium and chloride values were within normal limits.

Distention continued and a film of the abdomen on the eighth postoperative day showed evidence of bowel obstruction, probably in the right lower quadrant at the level of the terminal ileum. Despite continuous decompression with a Miller-Abbott tube, the condition was unchanged in another x-ray film 24 hours later.

On the tenth postoperative day evisceration of the abdominal wound occurred. The patient was in profound shock. Operation was done immediately. At a point in the jejunum 1.25 meters proximal to the ileocecal valve there was an oval perforation 4 cm. long with smooth edges in the long axis of the bowel. The portion of the bowel at the point of perforation lay in the left side of the abdomen at the level of the umbilicus. A six inch segment of bowel was resected and the abdomen was closed. The patient continued in shock and died in 24 hours.

Pathologist's Report on Surgical Specimens

The appendix was intact, 8 x 1.3 cm., with proximal stenosis. Distally the lumen was filled with pus and the surface was covered with pus. A culture of material taken from the surface at operation was sterile. Dense polymorphonuclear infiltration was

observed throughout the wall, which had been thinned by expansile pressure.

Multiple sections of the small intestine showed plastic peritonitis. Fibroblastic and capillary proliferation formed a moderately thick tissue on the surface, with a moderate mixture of polymorphonuclear leukocytes and a large component of small round cells. Mild inflammatory cell infiltrate was present throughout the muscularis, and in the submucosa there was severe edema with a scattering of inflammatory cells of a type similar to those in the peritoneal exudate. However, there was a greater prominence of plasma cells in this location. Pronounced enteritis was present, with an increase of plasma cells and small round cells between the orderly straight glands of the mucosa. The vessels contained no thrombi, and there was no evidence of vasculitis. In sections taken from the area of perforation a plastic reaction was noted around the edges with a fairly large component of polymorphonuclear leukocytes. It was not essentially different from the reaction elsewhere in the small intestine. No amebae and no areas of focal necrosis or tubercles or other specific inflammatory lesion were seen.

Pathologist's Report on Autopsy

At postmortem examination the abdominal organs were covered with a purulent exudate and the abdomen contained a moderate amount of turbid, yellow fluid.

A culture of a specimen of stool grew E. coli.

There was an extensive old, partly organized mural thrombus of the left atrium extending into the auricle.

The liver, which weighed 1,500 grams, showed fine nodular darkening but no passive congestion.

The spleen was twice normal size, weighing 300 gm. It contained two large pyramidal hemorrhagic infarcts of recent origin. The capsule was not thickened and there were no thrombi in the hilar vessels.

The stomach and duodenum were normal. The small intestine was dilated and the mucosa was edematous. 1.25 meters proximal to the cecum there was an intact side-to-side anastomosis with a 4 cm. lumen. Edema was noted throughout the small bowel. In the distal jejunum and ileum there was pronounced follicular hyperplasia of submucosal aggregates with prominent redness and central white spots. These lesions, which were 2 to 3 mm. in diameter, were present in every square cm. of the submucosa. There was no associated ulceration. The site of appendectomy was intact. Scattered patches of induration and exudate were noted on the mesentery and mesocolon. Upon dissection of the mesentery no thrombosis was observed. The adrenal glands were remarkably small, the combined weight being 3 gm. The cortices were thin and regular, the medulla autolysed.

Sections of the small intestine obtained at autopsy were examined microscopically and an inflammatory reaction identical to that previously noted in the surgical specimen—plastic peritonitic exudate and diffuse inflammation and edema throughout the wall, with prominent small round cell infiltrate of the mucosa. On the periphery was a thin crust of fibrin and cellular debris. The reddish spots observed in the gross specimen corresponded to areas of inflammatory cell infiltrate, mostly lymphocytes, and of telangiectasia. Again there was no evidence of amebiasis or tuberculosis or other specific inflammatory patterns.

In the ileum, the follicular hyperplasia was nonspecific and necrosis was not present. Sections of the colon showed a peritonitic exudate, but no noteworthy intrinsic inflammation.

In the spleen, hemorrhage in the pulp was noted in the areas of infarction. Otherwise it was normal. The lungs, liver, pancreas, adrenals, kidneys and brain were normal microscopically.

Diagnosis

I. Enteritis, type undetermined
   A. Recent ulceration and perforation of the jejunum
      1. Recent resection of perforated segment (and) appendectomy
      2. Subacute suppurative peritonitis.

II. Adrenal gland atrophy (3 gm.)

III. Rheumatic heart disease
   A. Mitral stenosis
      1. Mural thrombus in left atrium
      2. Old healed commissurotomy.

In this very perplexing case multiple sections were made of the small intestine particularly, in order to evaluate the sequence of events and the direction of spread of the inflammatory process. The most critical problem was whether or not the enteritis, which involved the entire wall of the intestine, was simply a neighborhood reaction from peritonitis. If that were the case, the perforation of the small intestine was unexplained. However, the very definite and diffuse mucosal inflammation of a small round cell type and the lack of dense continuity with the plastic peritoneal exudate strongly suggested that peritonitis was secondary to enteritis. There was definite hypoplasia or atrophy of the adrenal glands, but whether that was related to the cause of death was not apparent.

Pseudomembranous enterocolitis was precluded by the absence of blood and tissue in the stool, by the presence of E. coli and by the postmortem appearance of the colon.

The frequency and power factors of the microwave radiation to which the patient was exposed were unavailable because of security regulations. It was enough to cause a painful sensation of heat in the abdomen, however, and when heat can be felt, the tolerable level has been exceeded.[8] Although the power factor is not known it is known that the armed forces are using equipment emitting 2.5 megawatts peak power.[7]

It seems probable that the fluid contained in the small bowel received at least 10 per cent of the energy flux and that the temperature immediately was elevated high enough to denaturize the protein of the mucosal lining and initiate a severe enteritis. The whole reaction was one of inflammation, rather than infection.

The pathological findings are comparable to those brought about by Boysen[2] in experimental animals. Using radiation equipment emitting 5 to 500 watt power, he achieved pathological changes with whole body radiation. The jejunum and ileum were especially susceptible, showing hyperemia, hemorrhage and necrosis. Hyperemia of the spleen and hemorrhage into the myocardium were observed. Bloodless diarrhea ensued in each instance.

In the case here reported, the sudden onset, with sensation of unbearable heat, the cooked, hemorrhagic appearance of the small bowel and the pathological reports all point to the local absorption of heat in the umbilical and hypogastric regions with some generalized whole body radiation effect appearing in the myocardium, liver and spleen.

The hemorrhagic infarcts of the spleen were similar to those seen by the author in two other patients who were exposed to sufficient microwave radiation to cause pathological changes in the tissues.

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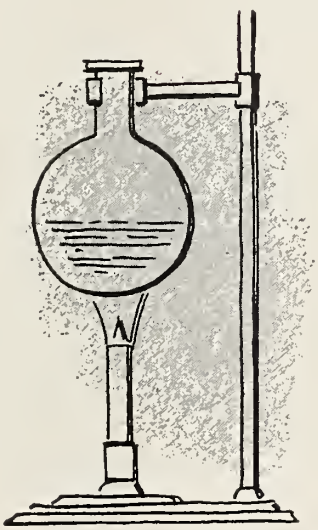

California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Men, Machines and Medicine

MEN BUILD AUTOMOBILES. Men drive automobiles. And, to the sorrow of all, men often drive automobiles into other automobiles, or into other objects, or off the road or in some other way which causes injury or death.

Last year the nation reported more than 40,000 persons killed and more than 1,350,000 injured, with more than 100,000 of the latter having permanent injuries. Three-fourths of these casualties were occupants of passenger cars.

Such statistics in the field of clinical medicine would immediately call for extensive research to discover the cause of disease and its cure. Health officers and practicing physicians would team up to search for ways to wipe out any illness which resulted in morbidity and mortality figures of this magnitude.

Today that sort of teamwork is a reality in the matter of automobile crash injuries. The medical profession is working with engineers, police officers, hospitals, statisticians and others in an effort to determine the cause of automobile injuries and to work for the elimination or decrease of the number and severity of these casualties.

An aim of the current study, which is being carried on by the Department of Public Health and Preventive Medicine of the Cornell University School of Medicine, is to determine the frequency and severity of injuries to various areas of the body. Coupled with this is a search for methods of designing automobiles in such a way as to eliminate or minimize both the frequency and severity of the injuries.

Earlier phases of research into automobile crashes have hinged mainly on engineering and educational studies. Highway engineers have learned to separate opposing lanes of traffic, to make crossings safer and otherwise design highways so that certain types of accidents may not occur. However, even with the latest type of superhighway, accidents are not eliminated so long as human nature remains what it is and carelessness, inexperience, emotional instability, drunkenness and fatigue still are factors.

Under these circumstances, safety engineers have decided that there will continue to be accidents. If so, it is good sense to try to minimize their effects.

Out of the Cornell University and other studies have come some concrete ideas for automobile design. The depressed hub of steering wheels, seat belts, safety door catches and padded instrument panels are coming more and more into prominence, all the results of this type of study.

Research has shown that 71 per cent of all auto crash injuries are to the head. Studies into the human tolerance to force have shown that common structures such as airplane instrument panels, when constructed of light metal which would deform under impact, absorbing much of the energy, could be struck by the head at impact velocities of 40 to 50 miles per hour without causing skull fracture, loss of consciousness or subsequent evidences of concussion. Such knowledge is bound to be translated into automobile construction.

Data gathered on cars with safety catches on the doors, padding, seat belts, etc., show that occupants of cars with these have a reduction of 29 per cent in the risk of injury rated dangerous. As to improved door-locking mechanisms alone, statistics show that there is a reduction of 27 per cent in the chance of front doors opening on impact and a reduction of 50 per cent in the chances of passenger ejection. Present findings are that seat belts, properly designed and installed, can reduce injury rates by as much as 30 to 60 per cent, depending on the type of accident and other factors.

The medical profession's part in this study boils down to a careful report on injuries received in

automobile accidents. The Cornell University studies being carried out in California correlate standardized data from the attending physician with the California Highway Patrol, the hospital emergency room and the State Department of Public Health.

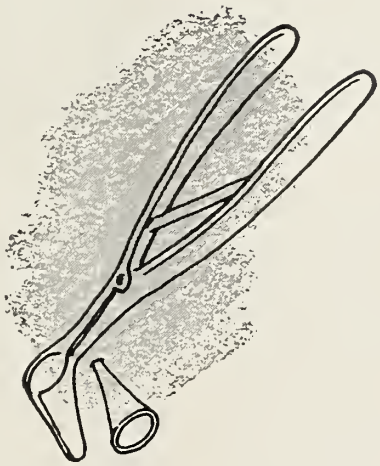
When an automobile accident occurs and there are injuries, the highway patrolman on the case fills in a few basic items on a report sheet. These relate briefly the type of accident and the position of the occupants in the car at the time of the crash. His report is then delivered to the attending physician or the hospital emergency room. The physician reports, on front-and-back charts of the human body, the location, type and severity of the injuries. This report is then forwarded to the State Department of Public Health, which correlates it with reports and photographs forwarded by highway patrol investigators. The completed report then goes to Cornell, where it is analyzed.

To date only San Luis Obispo County has served as a California reporting area for these studies. New areas are now being opened up, including the counties of San Mateo, San Benito, Stanislaus, Tuolumne and Calaveras. These areas will furnish their experience of six months, after which another six-month report will be sought in San Joaquin, San Bernardino and part of Riverside County.

In all, three years will be devoted to the gathering of statistics in California. The studies will cover metropolitan, suburban and rural areas, all types of highways, all types of terrain and all types of weather conditions.

In making these studies, Cornell University is working under the sponsorship of the Armed Forces Epidemiological Board through its Commission on Accidental Trauma. Funds for the studies come from the Surgeon General of the Army, the United States Public Health Service, Ford Motor Company and the Chrysler Corporation. The automobile makers have provided their funds on an unrestricted basis.

The California Medical Association has been proud to lend its assistance to these studies, which have already produced worthwhile results. Members of the Association in the counties being studied have responded admirably to the request for medical knowledge and reporting in accident cases. Such cooperation may be expected to continue. The end result of this research, if interim findings may be taken as a criterion, will be an immense saving in human life and human suffering.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 423rd Meeting of the Council, San Francisco, Mark Hopkins Hotel, March 3, 1957.

The meeting was called to order by Chairman Lum at 8:00 a.m., Sunday, March 3, 1957, in the Bonanza Room of the Mark Hopkins Hotel, San Francisco.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Vice-Speaker O'Neill, Secretary Daniels, Editor Wilbur and Councilors West, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Bostick, Teall, Kirchner, Reynolds, Varden, Carey, Heron and Rosenow.

Absent for cause, Councilors Wheeler and Loos.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff; Messrs. Read and Salisbury of the Public Health League of California; county society executive secretaries or assistants Scheuber of Alameda-Contra Costa, Jensen of Fresno, Pettis of Los Angeles, Bannister of Orange, Foster of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, and DeVere of Stanislaus; Doctor Jay Ward Smith, Associate Dean of Stanford Medical School; Doctor Walter E. Macpherson, Dean of College of Medical Evangelists, Doctor John B. deC. M. Saunders, Dean, and Doctor Malcolm Watts, Assistant Dean, of University of California School of Medicine; Doctors A. E. Larsen and William Gardenier and Messrs. K. L. Hamman, Etchel Paolini, Wilson Wahlberg and Richard Lyon of California Physicians' Service; Doctor John Adams of UCLA Medical School; Fred O. Field, legal counsel to the Los Angeles County Medical Association; Mr. Rollen Waterson, consultant; Richard Blum, Ph.D., consultant; Floyd Heffron, executive secretary of the State Board of Pharmacy; Doctor Malcolm H. Merrill, state Director of Public Health; Doctor Walter E. Batchelder, medical director of the Cancer Commission; and Doctors Jay J. Crane, J. Lafe Ludwig, T. J. Rossitto, William F. Quinn, Joseph F. Sadusk, Jr., Francis J. Cox, John W. Cline, L. Henry Garland and Howard Naffziger.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 422nd meeting of the Council, held November 10, 1956, were approved.

(b) On motion duly made and seconded, minutes of the 261st meeting of the Executive Committee, held December 6, 1956, were approved.

(c) On motion duly made and seconded, minutes of the 262nd meeting of the Executive Committee, held January 31, 1957, were approved.

2. *Membership:*

(a) A report of membership as of March 14, 1957, was presented and ordered filed. (Action taken March 17.)

(b) On motion duly made and seconded in each instance, 14 applicants were voted Associate Mem-

DONALD A. CHARNOCK, M.D. . . . . President
FRANK A. MacDONALD, M.D. . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
J. NORMAN O'NEILL, M.D. . . . . Vice-Speaker
DONALD D. LUM, M.D. . . . . Council Chairman
ALBERT C. DANIELS, M.D. . . . Secretary-Treasurer
IVAN C. HERON, M.D. . Chairman, Executive Committee
DWIGHT L. WILBUR, M.D. . . . . Editor
JOHN HUNTON . . . . . Executive Secretary
General Office, 450 Sutter Street, San Francisco 8
ED CLANCY . . . . Director of Public Relations
Southern California Office:
417 South Hill Street, Los Angeles 13 • Phone MAdison 6-0683

bership. These were: Iwao Kawakami, Morris L. Steckel, Los Angeles County; H. M. F. Behneman, Lucille M. Fostvedt, Joseph J. McMullin, Riverside County; Paul L. Kingsley, Marcia J. Levin, Morton R. Steinberg, San Francisco County; Robert M. Halbach, San Joaquin County; Dean R. Archer, Raymond Leer, Emmett Litteral, Oliver Byrd, Gerald K. Ridge, Santa Clara County.

(c) On motion duly made and seconded in each instance, 5 applicants were voted Retired Membership. These were: Jay H. McClellan, Joseph L. Szekely, Los Angeles County; Wm. Edwards, Sr., Marin County; J. M. McColl, San Diego County; Daniel M. Clark, Ventura County.

(d) On motion duly made and seconded, 25 members were granted reductions in dues because of prolonged illness or postgraduate study.

3. *Financial:*

(a) A report of bank balances as of March 14, 1957, was presented and ordered filed. (Action taken March 17.)

(b) A request for expenses incurred in 1954 was reviewed and, on motion duly made and seconded, ordered paid.

(c) A request for a loan to repair damages suffered in the 1955 floods was ordered referred to the Executive Committee.

(d) A proposed budget for the 1957-1958 fiscal year was presented by the Auditing Committee and, on motion duly made and seconded, was tentatively approved for submission to the House of Delegates, with certain items to be reconsidered.

4. *Committee on Legislation:*

(a) Doctor Dan O. Kilroy, chairman of the Committee on Legislation, and Howard Hassard, legal counsel, discussed a number of legislative proposals which have been introduced into the current State Legislature. After discussion of the various items, the Council instructed the committee as to its attitudes on the several measures.

(b) Doctor J. Lafe Ludwig, member of the Committee on Legislation of the American Medical Association, gave a report on several items now before the federal Congress and suggested that the Council, give some thought to means by which an increased interest in federal legislation might be achieved.

(c) Mr. Floyd Heffron, Executive Secretary of the California State Board of Pharmacy, discussed several legislative proposals before the State Legislature from that board. These measures are mainly designed to provide closer control over the dispensing of dangerous or hypnotic drugs.

(d) Doctor John W. Cline discussed a state legislative proposal to provide for adequate scientific testing of drugs or methods used in cancer therapy and for the legal restriction of items found without merit. On motion duly made and seconded, it was voted that the Association should cosponsor this proposal, along with other organizations.

On motion duly made and seconded, it was voted that the Legislative Committee should manage the progress of this measure in the State Legislature.

5. *Crippled Children's Services:*

Doctor L. Henry Garland and Doctor John Adams reported that current regulations in the Children's Bureau of the California State Department of Health prohibited the payment of fees to radiologists for performing angiocardiograms as diagnostic procedures prior to surgery, although such fees might be paid to hospitals under a formula adopted for the payment of hospital costs. They urged the Council to consider the advisability of the Association's requesting the State Department of Health to revise this procedure so that radiologists might receive fees direct for such services. On motion duly made and seconded, it was voted to advise the State Department of Health that it is the belief of the Council that physicians who perform authorized services under the Crippled Children's program are entitled to bill and collect fees for such services in their own names. This would include hospital radiologists who customarily render their own bills to the patient.

6. *Rehabilitation:*

Doctor Francis J. Cox reported that the governor plans to hold a Governor's Conference on Rehabilitation of the Physically Handicapped in the fall of 1957 and that, due to state legal restrictions, it might be necessary for some other organization to serve as fiscal or management agency for such conference. He suggested the possibility of the Association's offering to serve in this capacity if discussions of the steering committee (of which he is a member) of this conference should indicate the advisability of doing so. On motion duly made and seconded, it was voted to approve this suggestion.

Doctor Cox also stated that meetings would be planned with the chairman of medical services committees of the county societies for discussion of the rehabilitation and other programs under governmental auspices. On motion duly made and seconded, such meetings were approved.

As a means of continuing the interest in the rehabilitation and allied fields, Doctor Cox suggested the possible advisability of retaining a professional representative.

7. *Public Relations:*

On motion duly made and seconded, it was voted to advise a county medical society that the material forwarded to all county societies relative to pro-

posed poliomyelitis vaccination programs was considered to be of an informative, not a policymaking nature and had been sanctioned by the Council.

8. *Committee on Medical Education:*

On motion duly made and seconded, Doctor Edward C. Rosenow, Jr., Chairman of the Commission on Medical Education, was authorized to reactivate a subcommittee on physical function which had been in existence several years earlier, subject to the submission of detailed plans of the subcommittee which might require the expenditure of funds.

Recess:

At this point, 5:30 p.m., the Council was declared in recess, to reassemble in Los Angeles at 9:30 a.m., Sunday, March 17, 1957.

Reconvention:

The meeting was reconvened on Sunday, March 17, 1957, at 9:30 a.m. in the Colonial Room, Ambassador Hotel, Los Angeles.

On roll call, all councilors and officers noted present on March 3 were again present except Editor Wilbur and Councilor Kirchner; Councilors Wheeler and Loos, not present March 3, were present March 17.

In addition, Doctors Wayne Pollock, John E. Vaughan and C. V. Thompson and Messrs. Edgar Colvin and Ray Grove were present.

9. *Committee on Other Professions:*

Doctor Wayne Pollock, chairman of the Committee on Other Professions, presented a progress report on the negotiations of his committee with a similar group from another profession.

10. *Medical Review and Advisory Board:*

(a) Doctor Joseph F. Sadusk, Jr., chairman of the Medical Review and Advisory Board, gave a progress report on the activities of the board. He called attention to the advertising of certain insurance carriers and, on motion duly made and seconded, it was voted that the Advertising Committee be requested to meet with the board for consideration of what type of advertising would be considered acceptable.

(b) Consideration was given to a proposed press release detailing some of the findings of the board in its research activities and, on motion duly made and seconded, it was voted to approve the press release submitted and previously approved by the Committee on Public Relations.

11. *Central California Blood Bank:*

Mr. Roy Jensen, administrator of the Central California Blood Bank and executive secretary of the Fresno County Medical Society, reported that Central California Blood Bank had absorbed the service formerly provided by another blood bank in the area and was now operating on a self-sustaining basis and serving 35 hospitals.

12. *Appointment of Nominating Committees:*

(a) The chairman proposed, and the Council confirmed, the appointment of Doctors Bostick (chairman), Doyle and Varden as a committee to bring in nominations for the Board of Trustees of California Physicians' Service.

(b) The chairman proposed, and the Council confirmed, the appointment of Doctors Rosenow (chairman), Sherman, MacDonald and West to bring in nominations for appointment of members and chairmen of commissions and committees.

13. *Woman's Auxiliary:*

The chairman proposed, and the Council confirmed, the appointment of Doctors John W. Cline and R. Stanley Kneeshaw as members of the Advisory Board to the Woman's Auxiliary to the C.M.A. for the 1957-1958 year.

14. *California Physicians' Service:*

Councilor T. Eric Reynolds, president of California Physicians' Service, reported that the Board of Trustees of C.P.S. believed that organizational changes should be made which would permit the selection of a president as a full-time officer and the naming of one member of the Board of Trustees as chairman of that board for annual periods, with tenure limited to two successive years. On motion duly made and seconded, it was voted to approve these recommendations.

15. *Commission on Medical Services:*

(a) Doctor Francis J. Cox reported on a meeting held March 16 for the discussion of pending changes in social security laws and allied subjects. He proposed that a similar meeting be planned in a northern city prior to the 1957 Annual Session and, on motion duly made and seconded, approval was voted for such a meeting.

(b) Several changes in fees applicable to the "Medicare" program were presented and approved by the Council.

(c) A listing of fees for anesthesiology, arranged on a procedure or global basis, rather than a time basis, was presented as a proposed change in the Relative Value Schedule and, on motion duly made and seconded, the theory of such fees and the fees themselves were voted approval.

(d) Doctor Cox made progress reports on the application for proposed changes in industrial medical fees and on the Governor's Conference on Rehabilitation of the Handicapped.

16. *Resolutions of 1956 House of Delegates:*

The Council reviewed three items referred to it by the 1956 House of Delegates, as follows:

(1) Resolution No. 23, relative to narcotic drugs: On motion duly made and seconded, it was voted that no action be taken at this time because of the controversial nature of the subject.

(2) Resolution No. 24, relative to the definition of a specialist: On motion duly made and seconded, it was voted to request the appropriate Council of the American Medical Association for clarification of the definition of specialists.

(3) Resolution No. 36, relative to the labeling of all prescriptions: On motion duly made and seconded, it was voted to disapprove the proposal that all prescriptions be labeled for the reason that it was felt the prescribing physician should have free choice as to whether or not he desired such labeling.

17. *County Society Charter:*

At the request of the Shasta County Medical Society, it was regularly moved, seconded and voted to request the House of Delegates to issue a new charter in the name of Shasta-Trinity County Medical Society.

18. *Committee on School Health:*

Doctor Albert C. Daniels, chairman of the Committee on School Health, reported on decisions reached by that committee and requested Council approval.

(a) On motion duly made and seconded, it was voted to increase the size of the committee from seven to nine members.

(b) It was agreed that the committee should continue its biennial statewide meetings and emphasize county meetings, discontinuing regional meetings.

(c) On motion duly made and seconded, it was voted to approve local school health meetings arranged by local health departments and school superintendents.

(d) On motion duly made and seconded, it was voted to urge the State Department of Education to encourage surveys of school health programs where such surveys were desired.

(e) On motion duly made and seconded, it was voted to recommend to the State Department of Education that serious consideration be given to including preparation in the area of school health for all candidates for revised administrative credentials and for all candidates for elementary and secondary teaching credentials.

19. *Commission on Public Health and Public Agencies:*

On motion duly made and seconded, it was voted to add Doctor Donald C. Harrington to the membership of the Commission on Public Health and Public Agencies in his capacity as chairman of the Committee on Maternal and Child Care.

20. *Public Assistance:*

Mr. Hassard and Doctors Carey and Reynolds discussed the need of establishing a policy to be followed in the assignment of medical benefits to the aged, the blind and the needy children under terms of Public Law 880 of the Congress and a comparable appropriation act now under consideration by the State Legislature. On motion duly made and seconded, it was voted that such policy should call for (1) emphasis on home and office visits, (2) a fee schedule to be established and (3) California Physicians' Service to serve as fiscal agent on a cost-plus basis.

It was agreed to request Mr. K. L. Hamman to serve as the Association's representative at a series of meetings scheduled for discussion of this topic by state authorities.

21. *Legislation:*

On motion duly made and seconded, it was voted to agree to the appointment of a psychology committee under the State Board of Medical Examiners, for the purpose of approving schools, giving examinations and such other matters as the Legislative Committee shall approve, under terms of a psychology registration proposal now before the State Legislature.

22. *Reconsideration of Anesthesiology Fees:*

On motion duly made and seconded, it was voted to reconsider the action taken earlier in the meeting to approve a new schedule of fees for anesthesiology under the Relative Value Schedule.

Motion was made and seconded to defer action on this table of fees at this time but on vote the motion was lost.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:50 p.m.

Donald D. Lum, M.D., *Chairman*
Albert C. Daniels, M.D., *Secretary*

REGIONAL POSTGRADUATE INSTITUTE

SACRAMENTO VALLEY COUNTIES

Presented by Postgraduate Activities Committee of the California Medical Association, in cooperation with Sacramento Valley County Medical Societies, and College of Medical Evangelists, Harold M. Walton, M.D., Chairman, Section on Graduate and Postgraduate Medicine.

TAHOE TAVERN...JUNE 20-21, 1957...LAKE TAHOE

PROGRAM

Thursday, June 20

9:00-10:00 a.m.—*"Health Construction Consultations"* . . . Plotting a Course for the Autumn Years—Edward J. Stieglitz, M.D., Guest lecturer, Research Associate in Charge Investigations in Gerontology, National Institute of Health, U. S. Public Health Service, Washington, D. C.

10:00-12:00 m.—LECTURES:

"Lumps" in the Thyroid . . . Management of the Nodular Thyroid—Earl J. Boehme, M.D., Assistant Clinical Professor of Surgery.

"Pharmaceutical Fables" . . . Physician's Evaluation of "Popular" New Drugs—John E. Peterson, M.D., Clinical Professor of Medicine.

or

CONCURRENT SEMINARS

"Mister Five By Five" . . . Fads in Weight Reduction*.

"The Malignant Middle Years" . . . Cancer Problems in the Older Patient*.

"Babies—Special Delivery" . . . Elective and Selective Induction of Labor*.

You may go to the general lecture session or a seminar of your choice

2:00-4:00 p.m.—LECTURES:

"The Battle of the Bulge" . . . Technical Aspects of Hernia Repair—Elton L. Morel, M.D., Assistant Professor of Surgery.

"Good Labor Relations" . . . How to Avoid Trouble with the Patient in Labor—E. Edson Nichols, M.D., Associate Professor of Obstetrics and Gynecology.

or

CONCURRENT SEMINARS

"The Pied Piper and the Mouseketeers" . . . Office Problems in Pediatrics*.

"Antivirotics" . . . Virus Diseases and Immunization.

"The Rise and Fall of the Uterine Empire" . . . Complications During Prenatal Care*.

You may go to the general lecture session or a seminar of your choice

7:00 p.m.—No-host social hour, dinner and dancing.

Friday, June 21, 1957

9:00 a.m.—*"Predictable Emotional Stresses of Later Years"* . . . "The Slings and Arrows of Outrageous Fortune"—Edward J. Stieglitz, M.D.

10:00-12:00 m.—LECTURES:

"Miniature Medicine" . . . Management of Premature and Sick Infants—Robert F. Chinnock, M.D., Professor of Pediatrics.

"The Tie That Binds" . . . Complications of Biliary Surgery—Elton L. Morel, M.D.

or

CONCURRENT SEMINARS

"The Hapless Hormones" . . . Endocrine and Pseudoendocrine Problems*.

"The Red Menace" . . . Significance of Rectal Bleeding.

"The Skin Game" . . . Everyday Dermatology*.

2:00-4:00 p.m.—LECTURES:

"Out, Damned Spot! . . . or Not?" . . . Diagnosis and Treatment of Moles—Molleurus Couperus, M.D., Assistant Professor of Dermatology and Syphilology.

"Rectal Reconnaissance" . . . Technique and Procedures in Proctological Examinations*—Malcolm R. Hill, M.D., Professor of Proctology, Emeritus.

or

CONCURRENT SEMINARS

"Medicine Tomorrow" . . . Social and Economic Changes in Medicine*.

"Duct" Hunting . . . Complications of Biliary Surgery*.

"After the Ball Is Over" . . . Postoperative Care*.

You may go to the general lecture session or a seminar of your choice

*Each seminar will be led by three physicians from Sacramento and one faculty member from College of Medical Evangelists.

HOST: Socromento Society for Medical Improvement. . . . **REGIONAL CHAIRMAN:** C. M. Blumenfeld, M.D., 4700 Parkridge Rood, Socromento. . . . Special octivities for the entire fomily planned beginning with informol buffet dinner, Wednesday, June 19. **FEE:** $15.00. For odditional information, contoct Postgroduate Activities office, Colifornio Medicol Associotion, 417 S. Hill St., Las Angeles 13. **All California Medical Association members and their families are cordially invited to attend.**

In Memoriam

ANDERSON, STANLEY CHARLES. Died in Los Angeles, March 31, 1957, aged 57. Graduate of Rush Medical College, Chicago, Illinois, 1929. Licensed in California in 1929. Doctor Anderson was a member of the Los Angeles County Medical Association.

✣

BOLOGNINO, OCTAVE J. Died March 13, 1957, aged 68. Graduate of the Regia Università di Torino. Facoltà Medicina e Chirurgia, Torino, Italy. Licensed in California in 1918. Doctor Bolognino was a member of the San Francisco Medical Society.

✣

BROWN, PHYLLIS W. Died December 6, 1956, aged 28. Graduate of the University of Minnesota Medical School, 1953. Licensed in California in 1954. Doctor Brown was a member of the Orange County Medical Association.

✣

LAZELLE, HORACE C. Died March 19, 1957, aged 86. Graduate of the University College of Medicine, Richmond, Virginia, 1900. Licensed in California in 1919. Doctor Lazelle was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

LEET, NORMAN BENJAMIN. Died in Oakland, April 4, 1957, aged 53, of heart disease. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1930. Licensed in California in 1930. Doctor Leet was a member of the Alameda-Contra Costa Medical Association.

MONTGOMERY, COLONEL HARRY. Died in Los Angeles, March 19, 1957, aged 80. Graduate of the University of Toronto Faculty of Medicine, Toronto, Ontario, Canada, 1902. Licensed in California in 1907. Doctor Montgomery was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

PAEGEL, HOLLIS ARTHUR, JR. Died April 2, 1957, aged 37, of injuries received in an automobile accident. Graduate of Tufts College Medical School, Boston, Massachusetts, 1944. Licensed in California in 1951. Doctor Paegel was a member of the Orange County Medical Association.

✣

SNOW, WILLARD G. Died in Sausalito, March 31, 1957, aged 43. Graduate of Harvard Medical School, Boston, Massachusetts, 1939. Licensed in California in 1948. Doctor Snow was a member of the San Francisco Medical Society.

✣

STEWART, CHARLES WESLEY. Died in Burbank, March 29, 1957, aged 83. Graduate of the Denver College of Medicine, Denver, Colorado, 1908. Licensed in California in 1918. Doctor Stewart was a retired member of the Los Angeles County Medical Association and the California Medical Association and an associate member of the American Medical Association.

✣

WEISKOTTEN, WILLIAM OTTO. Died in La Jolla, March 14, 1957, aged 75. Graduate of the State University of New York College of Medicine, Syracuse, 1905. Licensed in California in 1920. Doctor Weiskotten was a retired member of the San Diego County Medical Society and the California Medical Association and an associate member of the American Medical Association.

NEWS & NOTES

NATIONAL • STATE • COUNTY

COLUSA

Dr. John W. Scott of Colusa was appointed to serve as county physician of Colusa County on a temporary basis until the Board of Supervisors considers and acts upon a proposal calling for the county health officer to "work with the county physician" and setting up an additional medical position, that of associate county physician. Dr. Scott, whose appointment is to serve at least until July 1, replaced Dr. Joseph Tillotson, who died last January.

LOS ANGELES

Dr. Theodore J. Curphey, formerly chief medical examiner of Nassau County, New York, has been appointed **coroner of Los Angeles County** to fill a post created by a charter amendment approved by voters last November which separates the duties of coroner from those of public administrator and provides that the coroner shall be a physician.

* * *

The retirement of two professors and the promotion of ten members of the faculty, effective July 1, was announced recently by the **College of Medical Evangelists.**

Dr. Charles M. Gruber, professor and chairman of the department of pharmacology and experimental therapeutics, and Dr. Otto Kampmeier, professor and chairman of the department of anatomy, are the two who will retire. Their places will be taken by Dr. Mervyn G. Hardinge, now associate professor of pharmacology and experimental therapeutics, and Dr. Harold Shryock, who at present is associate professor of anatomy and at one time was dean of the school of medicine.

Promoted: Assistant professor of stomatology Dr. Gordon K. Adams to associate professor; assistant professor of medicine Dr. Clarence Collier to associate professor of physiology; assistant professor of anatomy Dr. Guy Hunt to associate professor; assistant professor of microbiology Dr. Jack Zwemer to associate professor; assistant clinical professor of medicine Dr. Barton Hardin to assistant professor; instructor in anatomy Dr. Richard M. Ritland to assistant professor; associate professor of medicine Dr. Olov Bloomquist to clinical professor; instructors in surgery Dr. Samuel Fritz and Dr. David Hinshaw to assistant clinical professors.

* * *

The newly formed Southern California chapter of the **Pan-American Medical Association,** an organization whose purpose is to strengthen medical ties between nations of the Western Hemisphere, held its inaugural dinner last month in Los Angeles. Dr. Tracy J. Putnam, president of the association, said that a similar organization existed in Los Angeles until 1941 but died out during the war.

Dr. Charles Pierre Mathe, San Francisco, a trustee of the association, was the principal speaker at the inaugural gathering.

ORANGE

The Orange County General Hospital has received a certificate of accreditation from the Joint Commission on Accreditation of Hospitals, Dr. Lewis F. Ellmore, medical director of the hospital, announced recently.

SAN FRANCISCO

Dr. Dwight L. Wilbur was elected president-elect of the **American College of Physicians** at the meeting of the organization in Boston last month.

GENERAL

At the annual meeting of the **California Society of Anesthesiologists,** which was held in conjunction with the Western Conference of Anesthesiologists last month in Sun Valley, Idaho, Dr. Marshall Skaggs of Sacramento was installed as president and Dr. John Howard, San Diego, was named president-elect. Dr. Ronald Simpson, San Francisco, was elected vice-president and Dr. Francis Guinney, Los Angeles, secretary-treasurer, Dr. Bruce Henderson of Oakland was reelected chairman of the board of governors of the Western Conference.

* * *

The second film in the American Medical Association-American Bar Association series on **Medicine and the Law** titled "The Doctor Defendant," will be available from the A.M.A. Film Library for medical society or association showings, beginning July 1, according to Dr. George F. Lull, secretary and general manager of the A.M.A.

The new film dramatically presents four case reports of situations which caused **legal action against physicians.** In reviewing these cases in which malpractice was alleged, the 30-minute black and white sound film also demonstrates how a professional liability committee functions. It will be premiered at the A.M.A. convention in New York City on June 5. "The Medical Witness," the first of the two films, depicts right and wrong methods of presenting medical testimony by reenacting a personal injury trial.

Societies desiring to show either or both films may write to the Film Library, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois, or to Dr. John B. Chewning, director of professional relations, The Wm. S. Merrell Company, Cincinnati 15, Ohio.

POSTGRADUATE

EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communicotions relating to your future medicol or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, Californio Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Techniques of Hypnosis. Monday, Tuesday and Wednesday morning, June 24, 25 and 26. Fifteen hours. Fee: $60.00.

Advanced Techniques and Application of Hypnosis. Wednesday afternoon, Thursday and Friday, June 26, 27, 28. Fifteen hours. Fee: $100.00.

Electrocardiography. Monday through Friday, July 8 to 12. Guest instructor: J. Scott Butterworth, M.D., Associate Professor of Medicine, New York University. Thirty hours. Fee: $150.00.

Auscultation. Monday through Wednesday, July 15 to 17. Guest instructor: J. Scott Butterworth, M.D., New York University. Eighteen hours. Fee: $100.00.

Current Concepts in Medicine. Thursday, Friday and Saturday, August 1 to 3. Fifteen hours.†

Postgraduate Medical Seminar Cruise to the Hawaiian Islands leaving August 28, returning September 9. Inclusive fare: $559.00 up.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Medical Ophthalmology and Ophthalmoscopy. Thursday and Friday, May 16 and 17. Fourteen hours. Fee: $60.00.

Arthritis and Rheumatic Diseases. Thursday and Friday, May 16 and 17. Twelve hours. Fee: $40.00.

Ear, Nose, Throat, Clinics and Seminars. Friday and Saturday, May 24 and 25. Thirteen hours. Fee: $40.00.

Pediatrics. June 11 to 14.*

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

†Fee to be announced.
*Hours and Fees to be announced.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

POSTGRADUATE INSTITUTES, 1957

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: The chairman listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 1919 Wilshire Blvd., Los Angeles 57.

Medical Dates Bulletin

MAY MEETINGS

CALIFORNIA HEART ASSOCIATION Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

NORTHERN CALIFORNIA CHAPTER, AMERICAN COLLEGE OF SURGEONS Fifteenth Semi-Annual Clinical Conference, Sir Francis Drake Hotel, San Francisco, 9 a.m. to 4 p.m., May 18. Edmond Dana Butler, M.D., secretary-treasurer, 18 Dormidera, Piedmont.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

JUNE MEETINGS

CHILDREN'S HOSPITAL OF THE EAST BAY Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

STATE BOARD OF MEDICAL EXAMINERS Oral Examination, San Francisco, June 15.*

IDAHO STATE MEDICAL ASSOCIATION 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

STATE BOARD OF MEDICAL EXAMINERS Written Examination, San Francisco, June 17 to 20.

WYOMING STATE MEDICAL SOCIETY ROCKY MOUNTAIN MEDICAL CONFERENCE Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

SUMMER AND FALL MEETINGS, 1957

COLORADO DIVISION, CANCER SOCIETY ROCKY MOUNTAIN Cancer Conference, 9 a.m., July 10 and 11, Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., Chairman, 835 Republic Bldg., Denver 2.

STATE BOARD OF MEDICAL EXAMINERS Oral Examination, Los Angeles, August 17.*

STATE BOARD OF MEDICAL EXAMINERS Written Examination, Los Angeles, August 19 to 22.

UTAH STATE MEDICAL ASSOCIATION Annual Scientific Session, September 5 to 7, Hotel Utah, Salt Lake City, Utah. *Contact:* Harold Bowman, 42 South Fifth Street, Salt Lake City.

SAINT JOHN'S HOSPITAL Annual Postgraduate Assembly, September 12 to 14, Saint John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, Postgraduate Assembly, 22nd Street at Santa Monica Blvd., Santa Monica.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN DIEGO COUNTY GENERAL HOSPITAL 11th Annual Postgraduate Assembly, September 18 to 19. Reception for all registrants, 5:00 to 7:00 p.m., September 18. *Contact:* Haddon A. Peck, Jr., M.D., 525 Hawthorne St., San Diego.

NEVADA STATE MEDICAL ASSOCIATION Annual Meeting, Las Vegas, September 25 to 28. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

SAN FRANCISCO HEART ASSOCIATION 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

FIRST WESTERN INDUSTRIAL HEALTH CONFERENCE, Biltmore Hotel, Los Angeles. October 4 to 6. *Contact:* E. J. Zaik, M.D., secretary, Western Industrial Medical Association, 740 South Olive Street, Los Angeles 14.

SAN DIEGO COUNTY HEART ASSOCIATION Seventh Annual Professional Symposium on Heart Disease. U. S. Naval Hospital, San Diego, October 8. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth Ave., San Diego.

LOS ANGELES COUNTY HEART ASSOCIATION 27th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 W. Eighth St., Los Angeles, October 9-10. *Contact:* Walter S. Thompson, Jr., M.D., chairman, 660 S. Western Ave., Los Angeles.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

CALIFORNIA ACADEMY OF GENERAL PRACTICE Ninth Annual Scientific Assembly, November 3 to 6, Hotel Statler, Los Angeles. *Contact:* William W. Rogers, executive secretary, 461 Market Street, San Francisco.

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*NOTE: In regard to the dates of oral examinations, applicants are requested *NOT* to arrange to come to an oral examination until they receive a notice of the action of the Credentials Committee advising them of the time and place to appear.

THE PHYSICIAN'S *Bookshelf*

PRACTICAL PEDIATRIC DERMATOLOGY — Morris Leider, M.D., Associate Professor of Dermatology, New York University Post-Graduate Medical School. The C. V. Mosby Company, St. Louis, 1956. 433 pages, $10.50.

This book is an excellent and recommended review of the subject of pediatric dermatology. It comes doubly welcome because there are very few books in this specialized, though very commonly encountered, field.

There is an elementary, but excellently written and lucid consideration of skin anatomy, physiology, and pathology in 21 pages, including a useful dermatohistopathologic glossary. The chapter on principles of dermatologic diagnosis includes many useful tables on differential diagnostic points. Therapy is particularly excellently treated, including a fine section on exactly how dressings should be applied. There follows a section printed on blue paper (for easy reference) of 101 most useful dermatologic preparations. The remainder of the book is devoted to a systematic consideration of dermatoses arranged etiologically.

The book is written with a clear, concise style not devoid of humor. The material is excellently organized, almost all chapters containing tables into which a great amount of material is clearly presented. Especially good among the 41 tables are those classifying dermatoses by system involved—nails, oral mucosa, panniculus adiposus, sebaceous glands and sweat glands. The 115 photographs and drawings are well chosen, instructive and clear. The table of contents is fair. The index is very good. The type is very readable. The paper, with the unfortunate exception of the blue pages on therapy, is of very good quality.

On the distaff side, it is unfortunate that a book which considers hapalonychia, glossitis rhomboidea mediana, and folliculitis ulerythematosa reticulata does not include descriptions or illustrations of measles, chickenpox, roseola, or rubella. Fleabites, not always so easy to diagnose, are dismissed with two sentences. The important fact that insect bites may elicit bullous reactions in children instead of the usual wheals and papules, is not mentioned. The section on allergic mechanisms could have been more complete. Unguis incarnatus is incorrectly referred to as "unguium (genitive plural) incarnatus." Regrettably, no references are given at all for further reading. The author declared his intention to avoid an exhaustive bibliography, but would not a pinpointing of selected key articles be even better, and certainly better than no references at all?

These are, however, relatively minor drawbacks, and should not detract from the sound, practical approach to dermatology so beautifully presented. Although it contains little which is completely new to the dermatologist, the organization and classification of so much material in so little space should put the book in great demand with dermatologists. Because it contains so much valuable material which would be completely new to pediatricians and general practitioners, it will be of inestimable value in these circles.

DISEASES IN INFANCY AND CHILDHOOD—Second Edition—Richard W. B. Ellis, O.B.E., M.A., M.D., F.R.C.P., Professor of Child Life and Health, University of Edinburgh, E. & S. Livingston, Ltd., Edinburgh—Distributed in U. S. by The Williams and Wilkins Company, Baltimore, 1956. 710 pages, $10.00.

This volume by the Professor of Child Life and Health of the University of Edinburgh is a general pediatric text intended for the medical student, pediatrician and general practitioner. The first edition appeared in 1951 and this is the first printing of the revised second edition. The book is well printed and profusely illustrated. Its chapters on congenital malformations, constitutional factors and prenatal infections are interesting and in general up to date. However, the reader may be disappointed in the approach suggested in certain sections as this reviewer was with the author's treatment of the subject of allergy and of adrenal cortical hyperplasia.

References, though not numerous, cover recent literature fairly well, especially those of British origin.

This volume can be better recommended as a supplementary text on pediatrics than as the sole pediatric reference for one's library.

* * *

DERMATOLOGY—Donald M. Pillsbury, M.A., D.Sc. (Hon.), M.D., Professor and Director, Department of Dermatology; Walter B. Shelley, M.D., Ph.D., Associate Professor of Dermatology; and Albert M. Kligman, M.D., Ph.,D., Associate Professor of Dermatology, all from the University of Pennsylvania School of Medicine. W. B. Saunders Company, Philadelphia, 1956. 1331 pages, 564 figures, $20.00.

The arrival of this new textbook in the field of dermatology is a refreshing and stimulating event.

The authors have broken sharply from the traditional revision and repetition of other editions and texts which have cluttered so many medical textbooks in the past.

In writing this book, the basic sciences, particularly skin physiology, have been stressed, and we find the result truly rewarding.

Dermatologic terminology has been revised and simplified; only the "preferred" methods of therapy have been stated. The photographs and diagrams are extremely well chosen and at times humorous. The normal functions of the skin as an organ are stressed throughout.

Many readers will find the sections on skin allergy and hypersensitivity and industrial dermatoses particularly valuable.

The dermatologist reader will undoubtedly note the absence of complete lists of references. The chapters include only one or a few key references to the subject matter.

It is felt that nonspecialists, as well as dermatologists, students, as well as teachers, will welcome this clarifying textbook of the skin to what is often regarded as a somewhat cumbersome and perhaps confusing field of medical literature. This text represents one of the finest contributions to the field of dermatology in the past twenty-five years.

CLINICAL ROENTGENOLOGY—Volume IV—The Digestive Tract, the Gall Bladder, Liver and Pancreas, the Excretory Tract and Special Studies Emphasizing Differential Considerations—Alfred A. de Lorimier, M.D., Radiologist, St. Francis Memorial Hospital, San Francisco; Henry G. Moehring, M.D., Radiologist, Duluth Clinic, Duluth, Minnesota; and John R. Hannan, M.D., Radiologist, Cleveland, Ohio. Charles C. Thomas, Publisher, Springfield, Ill., 1956. 676 pages, $24.50.

The Fourth Volume of this excellent series covers not only the subjects mentioned in the title, but also obstetrical roentgenology.

As in the previous volumes, the reproductions of roentgenograms are in the same tone as the originals, and labeling is satisfactory. More important, every effort has been made to index the subjects in such a way that differential diagnosis is made more simple. Further helps are the addition of clinical and laboratory findings which complete the pictures of the disease processes under discussion.

It is a book which should be useful not only to radiologists, but to any doctors whose interest might lie in the fields which it encompasses.

* * *

NEW GOULD MEDICAL DICTIONARY—Second Edition—Edited by Norman L. Hoerr, M.D., Arthur Osol, Ph.D., with 88 contributors. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 1463 pages, $11.50.

The editors of this revised edition of what has become a classic work in its class have modernized the book throughout with 12,000 new definitions and 8,000 changes. These are predominantly in the areas of chest surgery, psychiatry, cancer, definitions on blood groups, antiarthritic compounds, veterinary medicine, dentistry, nuclear science and aviation medicine. At present this book contains more terms from today's live medical language than in any other dictionary. Moreover, in addition there is a special section of illustrations, and a section of important tables, which are helpful features, yet retain the optimum size for a book of this type. The list of distinguished specialist contributors make this a most authoritative text which is recommended to student and practitioner.

* * *

THE YEAR BOOK OF OBSTETRICS AND GYNECOLOGY—1956-1957—J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary), Professor of Gynecology, Cook County Graduate School of Medicine, Editor. The Year Book Publishers, Incorporated, 200 East Illinois St., Chicago, 1956. 592 pages, 82 illustrations, $6.75.

The 1956-1957 Yearbook of Obstetrics and Gynecology follows the familiar pattern of its previous editions. The editor has done an excellent job in culling through the world literature and, in a clear and concise manner, compressing the most interesting and informative material into a single 592 page volume. The subject matter is arranged in an orderly fashion beginning with the earliest fertilized ovum reported during the year and progressing through the various phases of obstetrics, gynecology and related clinical conditions.

The obstetrical portion includes sections on pregnancy tests, abortion, cardiac disease and cardiac surgery in pregnancy, diabetes and the prediabetic syndrome of pregnancy, toxemias, management of labor including anesthesia, and bleeding complications of pregnancy. This is followed by an orderly review of gynecological literature. Interspersed at frequent intervals in both sections the editor has added comments from other pertinent articles related to those immediately preceding.

This yearbook should find a useful place in the library of anyone interested in obstetrics and gynecology. It will prove most helpful to the busy and sometimes isolated practitioner who doesn't have time or recourse to the many journals reviewed. Its greatest usefulness will be for those readers interested in a ready reference guide to the original papers.

* * *

PELVIMETRY—Herbert Thoms, M.D., Emeritus Professor of Obstetrics and Gynecology, Yale University School of Medicine. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1956. 120 pages, $5.00.

"The purpose of this book is to place before practitioners of obstetrics a practical description of variations and abnormalities of the bony pelvis in relation to labor and to describe certain diagnostic procedures by which pelvic morphology and pelvic capacity can be ascertained." The book achieves its purpose very well. The author has devoted many years to the study of the human pelvis and is well renowned for having developed a method of x-ray pelvimetry. Dr. Thoms strongly espouses routine x-ray pelvimetry for all primigravid women, feeling that the knowledge so gained has resulted in a lessened incidence of trial labor, a lowered incidence of difficult and traumatic forceps operations, a diminution in the fetal mortality in primigravidas with breech presentations, and a decrease in the incidence of cesarean section in cases of unengaged head in primigravid women where palpatory examination alone suggested disproportion.

The variations in the shape of the pelvic inlet revealed by routine x-ray pelvimetry over a twenty-five year period are described. The variations are related to developmental factors (to which a whole interesting chapter is devoted), to the hormonal changes occurring at puberty, and to nutrition. Dr. Thoms suggests that the slightly flattened oval inlet, which has been considered characteristic of the female, may actually be due to abnormal influences (often nutritional). He shows that well-nourished young women, as represented by student nurses, have a much higher incidence of pelves of the dolichopellic type (oval, with the anteroposterior diameter of the inlet exceeding the greatest transverse) than do women applying for clinic maternity care in New Haven.

The inaccuracy of palpatory measurements, except for the determination of the anteroposterior and the transverse diameters of the outlet is remarked. The important pelvic dimensions and the methods for their determination are described. It is emphasized that the most significant information to be determined relates to pelvic capacity. If the diameters are large enough, the fetus will pass through a pelvis of almost any shape.

Pelvic midplane contraction is described, and said to be present in about sixteen per cent of the cases. When the distance between the ischial spines is less than 10 cm., Dr. Thoms regards it as "contracted." If midplane contraction is combined with shortening of the anteroposterior diamter of the outlet, operative delivery must be anticipated in over half the cases.

A short chapter deals with pelvic outlet contraction.

Pelvic roentgenometry as developed by Dr. Thoms is described in some detail. Emphasis is placed upon the lateral film.

Several chapters are devoted to pelvic abnormalities caused by diseases, the most notable being the rachitic and osteomalcic pelves. Included are the assimilation pelvis, spondylolisthetic, Naegle, kyphotic, scoliotic and coxalgic pelves.

This is a very excellent little volume of some 115 pages written by one of the outstanding authorities on the human pelvis. Not all physicians practicing obstetrics will agree that x-ray pelvimetry is indicated in every primigravid woman. Other than this there can be no quarrel whatever with the information which Dr. Thoms so concisely puts before us.

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Physician Reports Use of New Thyroid Hormone

A New York physician recently reported that he has narrowed down the field of thyroid gland substances to the one which appears to be the key actor.

Dr. Elmore M. Fields, Hempstead, N. Y., said in a preliminary report that a recently discovered hormone, sodium liothyronine, worked in thyroid gland illnesses when other thyroid preparations were only partly effective or even caused ill effects.

The report appeared in a recent issue of the *Journal of the American Medical Association.*

Dr. Fields used the hormone to treat 100 children suffering from hypothyroidism or metabolic insufficiency. The first is underactivity of the thyroid gland; the second is a condition thought to be caused by the body cells' poor use of thyroid products, and not by an inefficient thyroid gland.

Both hypothyroidism and metabolic insufficiency produce physical and emotional symptoms, including behavior problems, retarded growth, poor appetite, poor circulation, dryness of hair and skin, and constipation. However, in metabolic insufficiency, intelligence is normal, although many patients have poor school records, lack of ability to concentrate, and "don't care" attitudes. In hypothyroidism severe mental retardation and other severe physical symptoms can occur.

Thyroid extract, thyroglobulin, and thyroxin often give satisfactory results in the treatment of both disorders, Dr. Fields said. However, they are ineffective or only partially effective in some children and can cause side effects such as headache, increased irritability, or abdominal pain.

When he gave liothyronine to 40 children with metabolic insufficiency, the results were excellent in 22, good in 15, and fair in 3. Among 60 children with hypothyroidism the response was excellent in 35, good in 22, fair in two, and poor in one.

In almost all the children, liothyronine gave striking improvement in behavior, circulation, appetite, hair and skin texture, and bowel function, he said. During the original three-month test, the bone growth of many increased as much as 200 per cent beyond that expected for normal children of the same ages. Further treatment for nine months continued to produce improvement, he said.

In general, the response to liothyronine appeared to occur more rapidly than with other thyroid treatments, he said. None of the patients developed side reactions to the hormone, whereas 22 did after other treatments.

Dr. Fields concluded that liothyronine is an "effective, safe, and well-tolerated form of treatment" for the two disorders and that further studies are warranted.

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—like some drugs—can cause side effects that may force your patient to discontinue treatment

A reducing regimen that is dependent on diet alone is frequently complicated by psychic side effects—irritability, psychogenic weakness and fatigue.

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Each 'Dexamyl' Tablet or teaspoonful (5 cc.) of the Elixir supplies: 'Dexedrine' (dextro-amphetamine sulfate, S.K.F.), 5 mg.; amobarbital, ½ gr.

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*T.M. Reg. U.S. Pat. Off. †T.M. Reg. U.S. Pat. Off. for sustained release capsules, S.K.F.

Physicians Go to Universities For Postgraduate Study

Physicians, who like to keep abreast of "what's new" in medicine, prefer to go back to medical schools for additional training instead of relying exclusively on courses at medical meetings, hospitals, or seminars.

The number of courses, excluding medical society meetings, held in the continental United States during the nine-month period from September 1, 1955, to June 1, 1956, was 886, with a total physician attendance of 37,081.

Medical schools offered half of the courses and 36 per cent of the hours, according to a recent report by the American Medical Association.

Medical school courses are preferred by doctors because they can play a more active role than they can at a medical meeting or seminar. Active methods, such as are followed in medical schools, include laboratory work for individuals and small groups, project work, ward rounds, and the examination and presentation of patients by the students themselves.

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100 GRAM PORTION CALORIE VALUE

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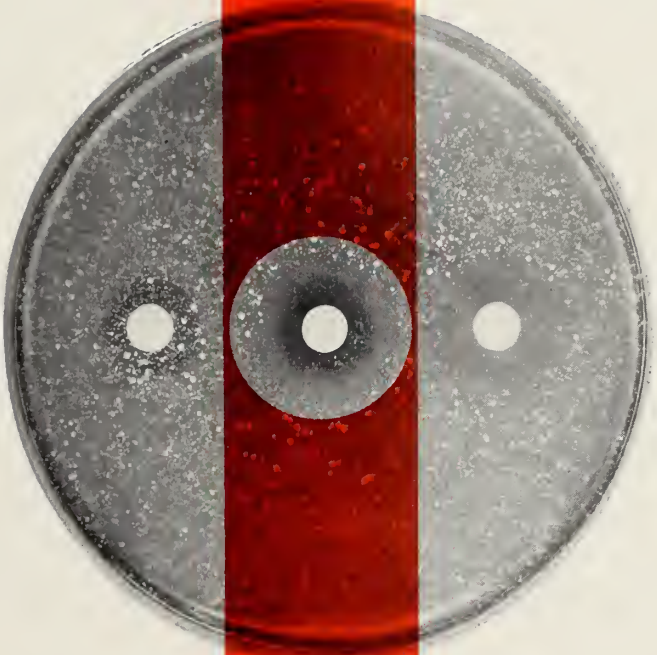

Results on a mixed culture

of E. coli and Candida albicans: Panmycin* Phosphate (left) eliminates the bacteria, but not the monilia (white grains). Panmycin Phosphate and Nystatin combined (center) eliminate both the bacteria and monilia (clear ring). Nystatin (right) eliminates the monilia, but not the bacteria (haze).

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A new salt of tetracycline, combined with Nystatin to protect against outgrowth of monilia

Each capsule contains: Tetracycline phosphate complex equivalent to tetracycline hydrochloride, 250 mg.; Nystatin, 250,000 units.
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California MEDICINE

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PHYSICIANS WANTED

CALIFORNIA LICENSED PHYSICIAN SURGEONS WANTED: Contact us for registration forms and information on our many excellent opportunities in California. Outstanding openings in GENERAL PRACTICE, INDUSTRIAL AND THE SPECIALTIES . . . associations, assistantships, groups, locations for private practice in NORTHERN, CENTRAL AND SOUTHERN CALIFORNIA. PACIFIC COAST MEDICAL BUREAU agy., 703 Market Street, SAN FRANCISCO, or 510 West Sixth Street, LOS ANGELES.

YOUNG ASSOCIATE WANTED around July 1, 1957 for interesting growing general practice. New, well equipped, office in beautiful western Marin County, California. Excellent hunting and fishing. Salary open with opportunity for partnership. Three hospitals with open staffs 20 miles; San Francisco, 40 miles. Contact Gordon J. Plattes, M.D., Box 95, Point Reyes Station, California.

WANTED—GENERAL PRACTITIONER urgently needed in fast growing Central California beach community, without full time physician for the past year. Population approximately 2,500. Good schools, churches. Excellent climate, hunting and fishing. Two (2) open staff hospitals, county seat 20 miles. Paved highway. For further information write: Chamber of Commerce, Cayucos, California.

GENERAL PRACTITIONERS—Excellent association with established group north of San Francisco, starting salary $1,000.00. MANY OTHER outstanding opportunities for GENERAL PRACTITIONERS. OBSTETRICIAN-GYNECOLOGIST association with well established group central California; OPHTHALMOLOGISTS, several excellent openings throughout California; OTOLARYNGOLOGIST association with outstanding ENT man, San Francisco Bay Area; ORTHOPEDISTS, several for group associations. ANESTHESIOLOGIST needed for excellent location. Outstanding potentialities. For further information please contact Norma Rohl, THE MEDICAL CENTER AGENCY, 26 O'Farrell Street, San Francisco, YUkon 2-3412.

G. P. OR SPECIALIST, preferable age of 30 to 37, in rapidly growing city in San Bernardino area. Individual office suite and practice, full Laboratory and X-ray facilities, excellent Hospital facilities. To share overhead with three other doctors. Can expect gross income well above average. Available for immediate occupancy. Box 93,300, California Medicine.

MEDICAL EXAMINER for Southern California county pre-employment continuous medical examination program. Starting salary $786 with periodic increases. Paid vacations, holidays and sick leave, part-paid health insurance and retirement plans. California registration required. For further details write San Bernardino County Civil Service Department, 236 Third Street, San Bernardino, California.

OPHTHALMOLOGIST: Excellent location for well trained eye man in fast growing California Beach City. Office space now occupied by busy Ophthalmologist. Will be vacant on or before July 1, 1957. Box 93,395, California Medicine.

WANTED: Physician in internal medicine. Ultra modern, fully accredited, 100 bed hospital. Chiefs of medicine and surgery are diplomates. Salary up to $12,900. Quarters available. Apply Dr. Robertson, Manager, VA Hospital, Miles City, Montana.

(Continued on Page 76)

Constant Head Noises Can Be Corrected

If you constantly hear strange noises—even in a silent room—you don't have to "grin and bear it." The chances are that the condition can be corrected, a Philadelphia doctor recently stated.

Head noises, called "tinnitus" from the Latin for tinkling, are often more unpleasant than real sounds. You can always get away from an outside noise, but you can't escape what is inside your head, according to Dr. Albert P. Seltzer, assistant professor of otolaryngology at the University of Pennsylvania Graduate School of Medicine.

Deaf people have the highest rate of abnormal head noises, but they also occur in those with good hearing, he said in a recent issue of *Today's Health*, published by the American Medical Association.

Head noises arise when something produces abnormal stimulation of the hearing apparatus, he said. They may start without warning or develop gradually. They may be soft and purring, tinkling, quite loud, constant, intermittent, or may sound like wood being sawed, steam escaping from a train shed, or water rushing over a dam.

Some people have tinnitus only when falling asleep; others have it in the early stages of anesthesia. The noises may be in one ear or in both. Sometimes they are rhythmical, corresponding to the heart beat. To some people they resemble words or songs.

There are as many causes of head noises as there are types, Dr. Seltzer said. What causes tinnitus in one person may have no influence in another. However, physicians have already learned a great deal about the disorder and are constantly learning more. Under no circumstances should a patient despair of correcting the condition.

Dr. Seltzer explained that noise is normally heard only when sound waves in the air strike the ear drum, setting off a series of reactions in the ear and brain. Head noises occur when something other than external sound starts the chain of events. This may happen when wax or foreign substances block the external ear canal. Middle ear infection or abnormalities in the passage from the middle ear to the throat are also possible causes. All of these can be corrected medically.

Other possible causes, unrelated to the hearing parts, are hardening of the arteries, otosclerosis, head injuries, allergic reactions, disturbances of hormone balance, and lack of essential vitamins. Tinnitus may temporarily follow explosions or loud noises or permanently result from constant exposure to loud sharp noises. Then something should be done to reduce the environmental sound. Tobacco, alcohol, and various drugs such as quinine, aspirin, morphine, and streptomycin also may be causes.

Dr. Seltzer concluded, "Regardless of the causes, whether they be trivial or serious, the symptom

(Continued on Page 71)

Medical Schools Alert to National Defense Needs

American medical colleges are alert to the needs of the populace in the event of a national emergency.

A recent report by the American Medical Association shows that 25 colleges of medicine have already become active in the program of Medical Education for National Defense.

The purpose of the program is to encourage the teaching of military and disaster medicine by regular faculty members of medical colleges. All emphasis is on medical rather than military topics, the report said, adding that "it is hoped that the problem of national preparedness in medical education can be solved by interested faculty members on a local basis and under local control."

Constant Head Noises Can Be Corrected

(Continued from Page 66)

should be reported at once to a physician, because the earlier the treatment is sought, the more effective the correction will be."

THE NEW YORK POLYCLINIC

MEDICAL SCHOOL AND HOSPITAL

(Organized 1881 • *The Pioneer Post-Graduate Medical Institution in America)*

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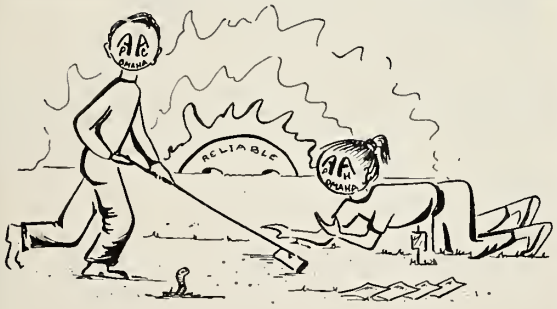

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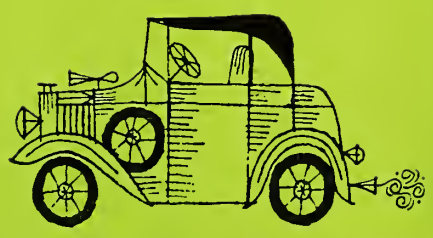

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Ten years ago, only one in four cancer patients was being saved. Steadily since then, heart-warming progress has been made. Today, with 450,000 new cancer cases estimated for 1957, you, their physician, can expect to save one in three of these patients.

Many factors contribute to this success – your leadership, a more aware public, improved methods and techniques of detection, diagnosis and treatment. There is every reason to expect this progress to continue to the point where half of those stricken by cancer will be saved. As yet science does not have the know-how to save the other half.

That knowledge will be gained – and, indeed, the riddle of cancer itself, will one day be solved in the research laboratories. To continue to support this vital work, as well as to carry on its dynamic education and service programs, the American Cancer Society is seeking $30,000,000 this Spring. We are again appealing to the public to "fight cancer with a checkup and a check."

The check is insurance for tomorrow. The insurance for today is largely in your hands, doctor. Fighting cancer with a checkup is our *immediate* hope for saving lives.

AMERICAN CANCER SOCIETY

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PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.
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American Medical Association President Urges Immediate Polio Shots

The president of the American Medical Association recently urged all Americans under the age of 40 to be vaccinated against polio immediately.

In an editorial in a recent issue of *Today's Health*, the American Medical Association's consumer publication, Dr. Dwight H. Murray, Napa, California, said the Salk polio vaccine is effective and "safe beyond any question."

More than 45 million people have already received one or more injections. However, thousands of Americans are still not protected against the disease.

To help correct this situation, the American Medical Association has asked all affiliated medical societies and physician members to develop community vaccination programs. These are being carried out in cooperation with health departments, voluntary health organizations, Parent-Teacher Associations, service clubs, unions, industries, and every other group which can play a role.

He urged all parents to see that their children are vaccinated with the three necessary shots. He added that parents need the shots too. Polio is not just "a children's disease."

Dr. Murray said, "Urge your friends, relatives,

(Continued on Page 95)

ALEXANDER SANITARIUM
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The Alexander Sanitarium is a neuropsychiatric open hospital for treatment of emotional states. Treatment consists of electric shock, hydrotherapy, insulin shock-therapy, psychotherapy and occupational therapy. Conditioned reflex treatment for alcoholism.

Occupational facilities consist of special occupational therapy room, tennis court, billiards, badminton court, table tennis and completely enclosed, heated, full-size swimming pool.

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This New Dosage form of dextro amphetamine sulfate is *not readily recognizable* by the most astute patient!

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SMALL, RED, SOFT GELATIN SPHERES, containing 5 mg. dextro amphetamine Sulfate.

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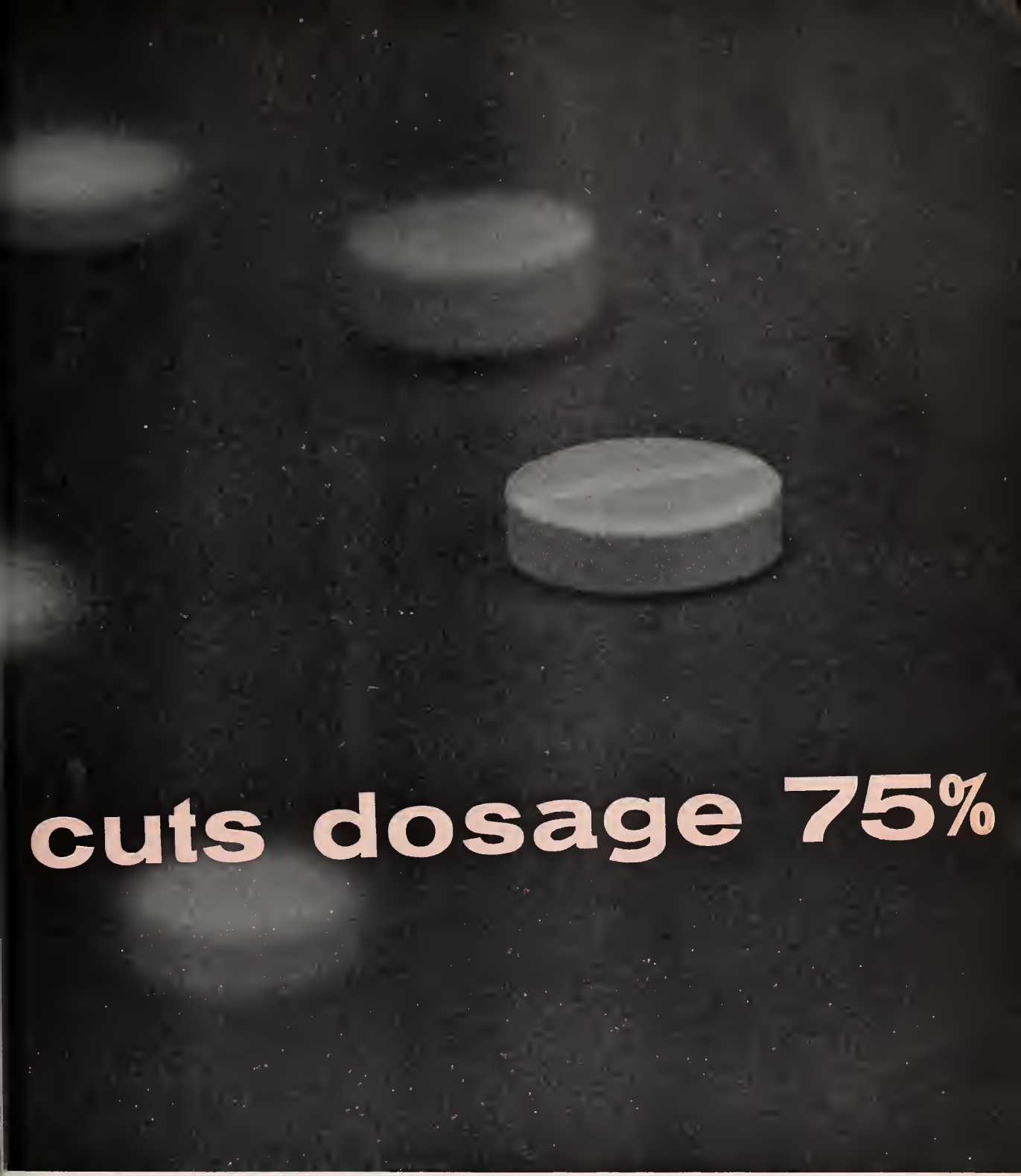

OW DOSAGE: a total maintenance dose of only 2 tablets aily.

OLUBILITY: prompt absorption, ready diffusion into body uid and tissue.

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ROAD-RANGE EFFECTIVENESS: KYNEX is particularly fficient in urinary tract infections due to sulfonamide-sentive organisms, including E. coli, Aerobacter aerogenes, aracolon bacilli, streptococci, staphylococci, Gram-negative ds, diphtheroides and Gram-positive cocci.

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SAFETY: KYNEX offers a margin of clinical safety based on low required dosage, solubility, slow excretion rate. Although KYNEX Sulfamethoxypyridazine is a sulfonamide derivative and the usual precautions regarding such drugs should be observed, the low daily dose of 1.0 Gm. is all that is required for therapeutic blood levels. No increase in dosage is recommended.

CONVENIENCE: The low adult dose of 1 Gm. (2 tablets) per day offers optimal convenience and acceptance to patients.

TABLETS: Each contains 0.5 Gm. (7½ grains) sulfamethoxypyridazine. Bottles of 24 and 100.

SYRUP: Each teaspoonful (5 cc.) contains 250 mg. sulfamethoxypyridazine. Bottle of 4 fl. oz.

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CLASSIFIED ADVERTISEMENTS

(Continued from Page 76)

PRACTICES FOR SALE

FOR SALE—Established general surgical and medical practice in new air-conditioned office. Gross 30 to 35 thousand yearly last 10 years. California city of 150,000. Excellent hospitals. Will sell all or half equipment and supplies. Box 93,375, California Medicine.

FOR SALE, South West Los Angeles. Completely equipped, general practice. Suitable also for Internist. Modern equipment. Excellent lease, new individual building. Excellent location next to busy pharmacy. Great potential, 3rd year gross, $40,000, growing fast. Box 93,340, California Medicine.

ESTATE TO DISPOSE OF PRACTICE, San Rafael, California. Widow of Joseph O. Hawkins, M.D., F.A.C.S., seeking surgeon and/or general practitioner to carry on husband's 25 year practice. Office, library and two treatment rooms furnished and equipped. Located in principal general office building in center of town. Any reasonable financial arrangement will be considered, preferably long term purchase like rent. Five year lease available. Box 93,380, California Medicine.

FOR SALE: General practice in growing central coast county-seat with excellent hospital facilities, climate, recreational access. Rent extremely reasonable in non-lease professional building. Assume only office furniture and equipment, which are all in excellent condition. Terms. Will take first satisfactory offer as specializing in July. Box 93,385, California Medicine.

PROFESSIONAL AND TECHNICAL AIDES

WANTED: MALE LABORATORY TECHNICIAN, x-ray experience desired, but not necessary. Must be California licensed or qualified to take examination. Forty (40) hour week, four-doctor private clinic in San Joaquin Valley. Starting salary $450 a month, with raise to $500 in six months, if satisfactory. Please write or call: Visalia Clinical and X-Ray Laboratories, 220 West Willow Street, Visalia, California. Telephone: Redwood 4-4691.

OFFICES FOR SALE, RENT OR LEASE

FOR RENT—Location for specialist in growing community in centrally located Medical Building in suburban metropolitan area of Oakland, California. Excellent opportunity for dermatologist, neurosurgeon, obstetrician-gynecologist, orthopod, otolaryngologist, pathologist, pediatrician, radiologist, urologist. Reasonable rent. Now available. San Leandro Medical Building Co., 1556 Leonard Drive, San Leandro, California. TRinidad 2-9200.

OFFICES FOR RENT—First class Medical Building, good location for Specialists, central area downtown Oakland, near Kaiser Center Development, ample parking, public transportation. California Medical Building, 1904 Franklin Street, Oakland 12, California. Telephone: GLencourt 1-4596.

DELUXE SUITES, three (3) available. Eden Medical Building, the only medical building directly across from a new 250-bed hospital, located in Castro Valley, with 40,000 population, Alameda County, California. Terrific opportunity for GP or Orthopedic specialty. Rent approximately 35c per sq. ft. Pick your own colors and layouts. For further information write Eden Medical Building Corp., 14222 East 14th Street, San Leandro, California.

FOR LEASE OR SALE in Bakersfield, medical or dental offices. Close in, private parking. Approx. 1100 sq. feet. For details write or telephone Joseph J. Consani, Realtor, 1008 Bradshaw, Bakersfield, California, Telephone: FAirview 5-2391.

LOS ANGELES-IMPERIAL-WESTERN MEDICAL CENTER. For Rent or Lease. Beautiful, modern, medical suites in attractive 18-office building. Ample parking, busy location. Unique rental arrangements. Special consideration to qualified doctors. Owner: 10101 Cheviot Drive, Los Angeles 64, Texas 0-7708.

FOR LEASE: West Covina, California. Suite with 680 sq. ft., available immediately in new Medical Building. Air Conditioned, Hi Fi, Laboratory, X-Ray facilities. Needs G.P., EENT, Orthopedic, or GU man. Seven specialists already in building in unrelated fields of practice. Four (4) hospitals in area. Box 93,390, California Medicine.

(Continued on Page 88)

One Citizen's Subtle Humor

The American Medical Association headquarters office in Chicago receives bags of mail each day, but seldom have they ever received a more hilarious letter than the one which came in recently from a Morristown, N. J., citizen with a sense of humor. Countless fund drives to eradicate countless diseases motivated his letter which was addressed to the American Medical Association.

Gentlemen:

For many years past I have been what might be termed an amateur student of medicine. I have also been interested more particularly in the organizations which have taken upon themselves the collection of monies to be devoted largely to the eradication of various diseases which still plague mankind.

Lately, this matter of raising funds for research looking to the cure of some dread malady has so intrigued me that I am seized with an uncontrollable desire to start a Foundation of my own. I have an impressive roster of sponsors, including such well known names as James DeWitt Rockefeller, (local boy), Horace Pulham Whitney (an up country lad) and many more equally famous. I have had an impressive letterhead designed by a leading commercial artist. I have an exceptionally fine mailing list of persons in the upper income brackets.

My purpose in writing to you, gentlemen, is to plead for your assistance in one simple aspect of my plans, namely won't you select a good disease for me? I have thought of beri-beri, pellagra, elephantiasis, trichinosis and many others, but when I look up the words in the dictionary, I always encounter some difficulty; the first three are tropical and I don't want to have to confine my efforts to the deep south. The fourth has something to do with pigs and certainly does not have the romantic urge so sorely needed for the success of a project of this kind. I rather fancied leukemia but only recently it was taken by another group. (I always thought it was a cancer of the red blood cells but I guess I was wrong.) Do you think that "Auricular and Ventricular Fibrillation" has possibilities? It has a beautiful ring to it, a sort of poetic, rhythmic cadence and even though it is only a mild heart condition, I doubt that many prospective donors would look it up.

But I shouldn't be expatiating on my own ideas when I intend to be guided solely by your good advice in the matter. Might I also suggest that you name an alternate, since by the time your letter arrives, the first selection may already be taken.

When I really have my organization in a sound financial position, I plan to underwrite what might be termed an auxiliary charity. With the continuing success of the Salk vaccine, there will undoubtedly be many people in that field without jobs and I propose in so far as possible to absorb them into my organization, thus avoiding a major unemployment problem.

It follows, therefore, that the ailments you suggest must present almost insurmountable obstacles to the research scientists, since I do not want them

(Continued on Page 95)

designed to **control anxiety**

in Arthritis, Asthma, Allergic Dermatoses

with **lower corticoid dosage**

the original tranquilizer-corticoid

Ataraxoid*

prednisolone and hydroxyzine

provides the emotional tranquilizer, ATARAX® (hydroxyzine) and the preferred corticoid, STERANE® (prednisolone) • control of emotional factors by tranquilization enhances response to the corticoid for greater clinical improvement • often permits substantial reductions in corticoid dosage, accompanied by reduction of hormonal side effects • confirmed by marked success in 95% of 1095 cases of varied corticoid indications[1]

ATARAXOID *now written as* **Ataraxoid 5.0**

5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in green, scored tablets. Bottles of 30 and 100.

and now available as **NEW Ataraxoid 2.5**

2.5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in blue, scored tablets. Bottles of 30 and 100.

and **NEW Ataraxoid 1.0**

1.0 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in orchid, scored tablets. Bottles of 100.

formerly **Ataraxoid**
NOW written **Ataraxoid 5.0**

advantages: (1) greater flexibility of dosage (2) effective tranquilization permits lower corticoid dosage

1. Personal communications

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PFIZER LABORATORIES *Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York*

Pfizer

CLASSIFIED ADVERTISEMENTS

(Continued from Page 82)

OFFICES FOR RENT OR LEASE (Continued)

FOR LEASE: Medical Suite in newest Medical Building in Costa Mesa. Ideal opportunity for residential family practice. Lease available. Contact P.O. Box 295, Newport Beach, California.

MEDICAL-DENTAL OFFICES available from $62.50 up. Decorating, partitioning included, depending on space. Pharmacy, X-ray and Clinical Laboratory in building. Abundant parking facilities. Garage next door. Modern and excellent address. 655 Sutter Building, San Francisco, California. Telephone ORdway 3-2492. Please call between 1 - 5.

STOCKTON, CALIFORNIA, MEDICO-DENTAL BUILDING. Opportunity in fast growing Stockton for internists, pediatricians, ENT, general practitioners. Stockton is rated as one physician to 1350 per capita. This is a 12 story, Class "A," air conditioned building catering exclusively to the medical profession. Complete facilities. Ample parking. Convenient to all transportation. OAKLAND, CALIFORNIA, MEDICAL CENTER BUILDING. Oakland's complete medical center on "The Hill." Adjacent to three leading hospitals, the new convalescent hospital, and all medical facilities. Medical Center Building is a five story, Class "A" structure catering exclusively to the medical profession. Strategically located at Summit and Thirtieth Streets, the hub of "The Hill." Convenient to transportation and parking. For information regarding available suites in either building telephone GLencourt 1-9911, or write Bay Cities Properties, 411 30th Street, Room 207, Oakland, California.

AVAILABLE ABOUT JUNE FIRST, Two (2) suites left in ultra-modern medical building at Stockton, California. Air Conditioned, Hi Fi music provided. Large parking lot. Twenty suites in building. Ideal for General Practitioner or Specialty. Rents reasonable. Medical Arts Building. For information write to 2015 Pacific Avenue, Stockton, California.

MODERN MEDICAL BUILDING in Tracy, California. Excellent location. Available June 1, 1957. Owner: Mrs. D. C. Basolo, Route 2, Box 181, Tracy, California.

COMPLETE MEDICAL OFFICE space available in attractive new Medical-Dental building in fast-growing Morro Bay, California. General Practitioner preferred. Includes two (2) examining rooms, consultation room, office, reception room, laboratory and X-ray. Write Mrs. Vivian Crane, 990 Pacific Street, San Luis Obispo, California, or telephone San Luis Obispo LIberty 3-4800.

MEDICAL SUITE JUST COMPLETED. Designed for two physicians to share. Includes waiting room, nurse's area, two consultation rooms, three examination rooms, laboratory. X-ray facilities adjacent and available. Beautifully appointed with excellent lighting and heating. Off-street parking. Located on "Doctor's Row" in San Mateo. For further information telephone DIamond 2-0336.

ATTRACTIVE SUITES available now in exclusive 19 unit Woodside Plaza Medical Center, Redwood City. Part of 20 acre shopping center in newly urbanized and rapidly growing area; six elementary schools and high school within mile radius; suites already leased to board certified radiologist and board certified pathologist from nearby district hospital. Contact Milton Meyer Co., 39 Sutter Street, San Francisco, California. Telephone: SUtter 1-5100.

PALO ALTO NEW MEDICAL SUITES NOW LEASING. Garden type-Air conditioned, all ground floor, within landscaped area. Plenty off street parking, adjoining shopping center. In way of additional future population growth. Send for descriptive Brochure. Owner E. J. Nackord, P. O. Box 601, San Carlos, California.

TWO (2) MEDICAL UNITS in new Medical Building for lease. Living conditions ideal. Rapidly growing community. Contact A. R. Ness, M.D., 143 East Main Street, Los Gatos, California.

FOR LEASE: Two (2) offices in new 5-unit Medico-Dental Building. 875 sq. ft., originally planned for obstetrician, other 700 sq. ft. Central location, refrigerative cooling, parking. Verne A. Stark, D.D.S., 140 McHenry Avenue, Modesto, California. Telephone: LA 3-8921, 9-4 weekdays, LA 3-6976, nights and week-ends.

REAL ESTATE FOR SALE

DO YOU LIKE TO FISH—HUNT—OR JUST PLAIN LOAF? This is the spot! Excellent modern three (3) bedroom, two (2) bath, electric kitchen home, plus guest house, and office library. Grand opportunity for semi-retired physician in community. Five acres. Write Ballard White, Box 73, Downieville, California, for further information.

Pollen Study Suggests Atomic Fall-Out Protection Method

Two Milwaukee researchers recently concluded from studies of pollen and mold fall-out that a city should be safer from atomic fall-out than the surrounding country.

Only in the event of a direct hit would the city be more dangerous, Dr. Herman A. Heise and Eugenia R. Heise, M.T., wrote in a recent issue of the *Journal of the American Medical Association.*

They explained that a city is usually warmer than the surrounding country. The rising warm air currents above the city carry solid particles—pollens, molds, and radioactive particles — aloft and keep them there. They fall to the ground when there are no upward air currents, especially when the air nearer the earth is cooler than the air above it.

The researchers suggested that this knowledge could be applied to prevent "the hysterical exodus from a city to a more dangerous rural area in the event of an atomic attack."

The city could be made even safer, they said, by artificially increasing the city's naturally high temperature. This could be done by heating houses, turning on street lights and opening windows on the leeward side. Even an isolated village or a single residence might derive some protection by lighting fires on the windward side, which would produce upward air currents.

The researchers constructed a model city above which they scattered mold spores. The powder then resembled a cloud that settled slowly and unevenly upon the miniature buildings and lawns. When the city was warmed slightly to a temperature above that of the air, the clouds over the city billowed perceptibly but kept their distance from the ground and were finally dispersed over the rural areas.

The researchers also took pollen and mold samples from the air above and about a city on the west shore of Lake Michigan at a time when the wind was from the southeast. They found that the "country" pollen count, as represented by the count made on the south, or windward, side of the city was the highest. The lowest was on the northwest, or lee, side.

What happened was this: The wind carrying pollens and molds blew horizontally over the country south of the city. Then it met the warm air rising over the city, which pushed up the air containing the pollen and molds. In that case, there was no fall-out over the city.

Fall-out happens this way: When pollens and molds get high enough, they became stable because rising warm air holds them up. When the air below becomes cooler, it stops rising and the pollen falls. For instance, the greatest fall-out ordinarily occurs at night and early morning when radiation from the earth causes the air to be cooler near the earth's surface.

American Medical Association President Urges Immediate Polio Shots

(Continued from Page 78)

and business associates to be vaccinated. If you belong to an organization, try to make polio vaccinations for every member under 40 a goal for 1957."

Three shots are needed for maximum effectiveness. The first two are usually about two weeks apart, although this can be varied to suit the circumstances. The third is given about seven months later.

Dr. Murray concluded, "The sooner you receive the injection the better, in order to develop immunity before the next polio season begins in June.... Your neighbor's vaccination is no protection for you."

One Citizen's Subtle Humor

(Continued from Page 82)

to arrive at a successful conclusion in a mere matter of a year or two. Such an unhappy contretemps would only necessitate a fresh start, all of which would be demoralizing to staff and contributors.

I await with anxiety your prompt reply. Thank you!

—A.M.A. Secretary's Letter

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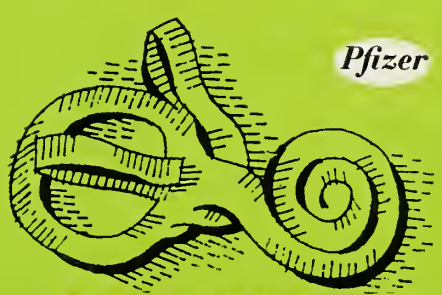

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Monterey County Medical Society, P. O. 8ox 308, Salinas. Meets First Thursday.
Pres., Keith Corp, 11 Maple St., Salinas.
Secy., Donald Taugher, 58 Via Castanada, Monterey.

Nopo County Medical Society. Meets Second Wednesday.
Pres., Harry Ehrlich, 1130 First St., Napa.
Secy., Thomas W. Ledwich, 1130 First St., Napa.

Oronge County Medical Association, 1226 N. Broadway, Santa Ana. Meets First Tuesday, 7:00 p.m.
Pres., Carl J. Paul, 605 East Chapman Ave., Orange.
Secy., William H. Wickett, Jr., 211 North Pomona St., Fullerton.

Plocer-Nevada-Sierra County Medical Society. Meets Second Wednesday.
Pres., 8. W. Hummelt, Nevada City.
Secy., T. J. Rossitto, 1166 High St., Auburn.

Riverside County Medical Association, 4175 8rockton Ave., Riverside. Meets Second Monday, 8:00 p.m., El Loro Room, Mission Inn.
Pres., J. Harold Batzle, 4046 Brockton Ave. Riverside.
Secy., Donald Abbott, 4029 8rockton Ave. Riverside.

Socramento Society for Medical Improvement, 2731 Capitol Ave., Sacramento. Meets Third Tuesday, 8:30 p.m., Sutter Hospital Auditorium.
Pres., Carl E. Burkland, 2901 Capitol Ave., Sacramento.
Secy., Geoffrey A. Fricker, 1215 28th St., Sacramento.

San Benito County Medical Society. Meets First Thursday, Hazel Hawkins Memorial Hospital, Hollister.
Pres., Kent S. Taylor, 345 Fifth St., Hollister.
Secy., R. L. Hull, Bank of America Bldg. Hollister.

San Bernardino County Medical Society, 615 D St., San Bernardino. Meets First Tuesday 8:00 p.m., San Bernardino County Charity Hospital.
Pres., Ben D. A. Miano, 1020 "D" St., San 8ernardino.
Secy., Gordon Hodges, 1400 "D" St., San Bernardino.

Son Diego County Medical Society, 3427 - 4th Ave., San Diego 3. Meets Second Tuesday, Mission Valley Country Club, 950 West Camino Del Rio.
Pres., James MacLaggan, 525 Hawthorn St., San Diego 1.
Secy., James 1. Knott, 3712 30th St., San Diego 4.

Son Froncisco Medical Society, 250 Masonic Ave., San Francisco 18. Meets Second Tuesday, 8:15 p.m., 250 Masonic Ave., San Francisco 18.
Pres., Donald M. Campbell, 250 Masonic Ave., San Francisco 18.
Secy., Roberta Fenlon, 250 Masonic Ave., San Francisco 18.

Son Jooquin County Medical Society. Meets First Thursday, 8:15 p.m., 936 N. Commerce St., Stockton.
Pres., James J. Heffernan, 1003 Medico-Dental Bldg., Stockton.
Secy., F. A. McGuire, 307 Medico-Dental Bldg. Stockton.

5an Luis Obispo County Medical Society. Meets Third Saturday, 7:00 p.m., Anderson Hotel, San Luis Obispo.
Pres., Albert Gazin, 743 Pismo St., San Luis Obispo.
Secy., Anthony V. Keese, 990 Pacific, San Luis Obispo.

5on Mateo County Medical Society, 122 Second Ave., San Mateo. Meets Third Tuesday.
Pres., Henry A. Brown, 77 N. San Mateo Dr., San Mateo.
Secy., William H. Thompson, 1515 Trousdale Dr., Burlingame.

5onta Borboro County Medical Society, 300 West Pueblo St., Santa Barbara. Meets Second Monday, Cottage Hospital.
Pres., Douglas F. McDowell, 317 W. Pueblo St., Santa Barbara.
Secy., Robert I. Cord, 300 W. Pueblo St., Santa Barbara.

5onta Cloro County Medicol Society, 1960 The Alameda, San Jose 26. Meets Third Monday except in July and August.
Pres., Thomas N. Foster, 630 E. Santa Clara St., San Jose.
Secy., Carl O. Carlson, 660 E. Santa Clara St., San Jose.

Sonto Cruz County Medical Society. Meets every Second Month, Second Tuesday. Time, place to be announced.
Pres., James Spencer, 135 Monte Vista, Watsonville.
Secy., William Cress, 526 Soquel Ave., Santa Cruz.

Shosta County Medical Society. Meets First Monday.
Pres., Paul B. Stratte, 2005 Court St., Redding.
Secy., Roland R. Jantzen, 1726 Market St., Redding.

Siskiyou County Medical Society. Meets Sunday on call.
Pres., Isaac Spomer, Box 398, Tulelake.
Secy., R. W. Bayuk, 750 South Main Street, Yreka.

Solano County Medical Society. Meets Second Tuesday, 8:00 p.m., at different meeting places.
Pres., O. S. Nesting, 841 Georgia, Vallejo.
Secy., Harle B. Grover, 327 Georgia, Vallejo.

Sonomo County Medical Society, 300 American Trust 8ldg., Santa Rosa. Meets Second Thursday.
Pres., Walter E. Weber, Room 304, American Trust Bldg., Santa Rosa.
Secy., Clayton B. Taylor, Room 304, American Trust Bldg., Santa Rosa.

Stonislous County Medical Society, 702 - 18th St., Modesto. Meets Third Tuesday of the month, 7 p.m., Hotel Covell, Modesto.
Pres., Guerne W. DeLappe, 301 Downey Ave., Modesto.
Secy., Robert W. Purvis, 709 18th St., Modesto.

Tehomo County Medical Society. Meets at call of President.
Pres., G. W. Ingle, 304 Solano St., Corning.
Secy., L. Wolfe, 75 Belle Mill Rd., Red Bluff.

Tulore County Medical Society.
Pres., Cyril H. Johnson, 795 Cherry Ave., Tulare.
Secy., Victor A. Badertscher, 499 North L St., Dinuba.

Ventura County Medical Society. Meets Second Tuesday, 7:15 p.m., Colonial House, Oxnard.
Pres., Joseph F. Maguire, 2755 Loma Vista Rd., Ventura.
Secy., F. K. Helbling, 34 N. Ash St., Ventura.

Yolo County Medical Society. Meets First Wednesday.
Pres., Ernie A. Young, 1st and Main Sts., Winters.
Secy., James A. Kennedy, 218 F St., Davis.

Yubo-Sutter-Colusa County Medical Society. Meets Second Tuesday.
Pres., Rocco A. Montano, 316 G St., Marysville.
Secy., Robert I. Hodgin, Box 749, Marysville.

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(For roster of C.M.A. committees and other organizations, see last month's issue.)

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Gin and Tonic, Cashew Nuts Cause Skin Reactions

"New drugs, new eruptions" has long been an adage of dermatologists. Now it seems necessary to add to it: "New drinks, new eruptions," and maybe even, "New travels, new eruptions."

Two unusual cases of skin sensitivity—one to the recently popular drink, gin and tonic, and the other to unroasted cashew nuts found in the tropics—were recently reported.

The reports were made in letters to the editor of the *Journal of the American Medical Association* and appeared in a recent issue.

Drs. Frederick G. Novy Jr. and Gordon R. Lamb, Oakland, California, told of a patient who developed a severe reaction after drinking gin and tonic (quinine water) because of his sensitivity to quinine.

They said that such sensitivity may produce headache, tinnitus, deafness, dizziness, visual impairment, fever, nausea, vomiting, and, most commonly, skin eruptions.

Their patient knew he was sensitive to quinine and usually avoided drinking quinine water. However, he attended a party at which only gin and tonic was served and, in the course of three hours, had several drinks. The doctors estimated that he consumed only about 45 milligrams of quinine, yet he developed a severe reaction—eruptions, redness, and swelling occurred all over his body within 24 hours.

At the end of 16 days, including six in the hospital, the eruption had cleared except for a few spots on his hands and feet. Treatment included aluminum acetate solution dressings, corticotropin, and trepelennamine citrate.

The case of cashew nut sensitivity was seen by Drs. Carroll S. Wright and Donald N. Tschan, Temple University Medical Center, Philadelphia. They reported it to the *Journal* because Americans traveling abroad may develop the eruption, "one that is scarcely mentioned in the textbooks."

Dermatitis from the cashew nut is rare in the United States. The tree grows chiefly in tropical America, Africa, and the West Indies, and dermatitis results only from contact with the rind oil and not from the nutmeat. In preparation for commercial use, the nuts are roasted, causing the outer shell to burst open and release the oil, which burns away.

The patient picked cashews while traveling in Ceylon. She immediately developed a severe inflammation on the hands, neck and face. The cause was not determined until she came home, opened some nuts she had brought with her, and developed a similar eruption.

Hardening of Arteries Found in Baboon

Hardening of the arteries, a fairly common disease of man, has been described in the Doguera baboon by two California researchers.

Arteriosclerosis has been rarely described in subhuman primates, either as a naturally occurring or experimentally produced disease, Drs. Stuart Lindsay and I. L. Chaikoff of the University of California said.

They autopsied two male baboons, each about 20 years old, which had lived continuously in the San Diego Zoo. They were fed a diet of bread and seasonal vegetables and fruits (lettuce, carrots, potatoes, oranges, bananas, apples, grapes, and watermelon).

The disease process in the baboons was similar to that seen in other species, including man, birds, dogs, and cats, they said in a recent issue of *Archives of Pathology*, published by the American Medical Association.

However, there were some differences in the disease process in the various animals. While fatty deposits in the arterial walls are often associated with arteriosclerosis, there were only a few found in the baboons' artery walls. Those that were found probably were manufactured on the spot, and not transported there from elsewhere in the body, the researchers said.

They said it was "of special interest" that the baboons had been on a diet low in fats and probably devoid of cholesterol. This was one reason for suggesting that the fatty acid deposits were manufactured. Other reasons were the position of the fatty deposits, which were low in cholesterol, and previous findings that normal artery walls of various animals are capable of synthesizing cholesterol and fatty acids.

The disease occurred in the aorta—the major blood vessel leading from the heart; the arteries of the heart itself, and the common iliac arteries in the pelvis, abdominal wall, and lower limbs.

They said the arteriosclerotic process appeared to occur this way: The inner elastic membranes or middle elastic layers of the artery walls degenerated; then they were rebuilt in layers with depositing of carbohydrate substances, thickening of the walls, and formation of plaques. There was a minimum of fatty depositing, which probably was secondary to the major process of rebuilding.

This sequence of events and the type of material in the rebuilt artery walls was the same as that found in some other animals and man, they said.

Arteriosclerosis has also been found in cows, elephants, one gorilla, and a few new and old world monkeys, but not in the higher apes (chimpanzees, orangs, and gibbons) or in lemurs.

It has been produced experimentally in rhesus monkeys which were subjected to prolonged vitamin B_6 deficiency and in cebus monkeys fed diets low in sulfur amino acids and high in cholesterol.

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American Medical Association Committee Helps TV, Radio Producers

Twelve United States doctors are helping America's 50 million television viewers get a more authentic picture of medicine.

They are members of the American Medical Association's Physicians Advisory Committee on Television, Radio, and Motion Pictures, whose work is outlined in an article and editorial in a recent issue of the *Journal of the American Medical Association.*

Organized in February, 1956, under the leadership of the A.M.A. Board of Trustees and department of public relations, the committee is composed of physicians in Los Angeles and New York, the two cities where 95 per cent of all television, radio, and movie productions originate.

It was organized because the increasing number of television shows dealing with aspects of medicine created a need for a central advisory group. Until last year, producers sought advice from individuals, the A.M.A.'s Chicago headquarters, the New York medical societies, or the Los Angeles County Medical Association.

The article quoted Dr. Robert W. Gentry, chairman of the committee's Los Angeles group, as say-

(Continued on Page 18)

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1. Frohman, I. P.; Pomeranze, J.; Rummel, W.; Kircher, R. F.; Clancy, J. B.; Dwyer, T. A.; Wagner, H.; O'Brien, T. E.; Curley, R. T.; Jörgensen, G.; Onorato, R. R.; Ira, F.; Lee, Jr., J. G.; Gorla, W. O.; White, R. N.; Gadek, R. J.; Remy, D.: Scientific Exhibit, 6th International Congress of Hematology, Boston, Mass., August, 1956.
2. Wagner, H.: Landarzt *31*:496, 1955.
3. Jörgensen, G.: Arztl. Wchnschr. *10*:82, 1955.

†α-aminoacetic-ferrous sulfate complex, exsiccated

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American Medical Association Committee Helps TV, Radio Producers

(Continued from Page 14)

ing. "The primary purpose of this committee is assistance. We are making ourselves available as advisors, not imposing ourselves as censors."

The committee tries to advise portrayal of realistic medical situations, the article said. Among suggestions to television producers who have requested script review were:

"A sedative is usually not administered by hypo. It would be better to give a capsule with a glass of water."

"A patient hanging between life and death would not be left unattended."

However, the committee realizes that medical fiction need not always conform to the usual practice of medicine at the expense of certain elements of drama, the article said. For example, after reviewing one script, the committee pointed out that it would be unlikely that a doctor would operate on a member of his own family, and that the training period necessary for such surgery would be greater than shown, but "it was agreed that a certain degree of dramatic license must be permitted in a program of this nature."

(Continued on Page 27)

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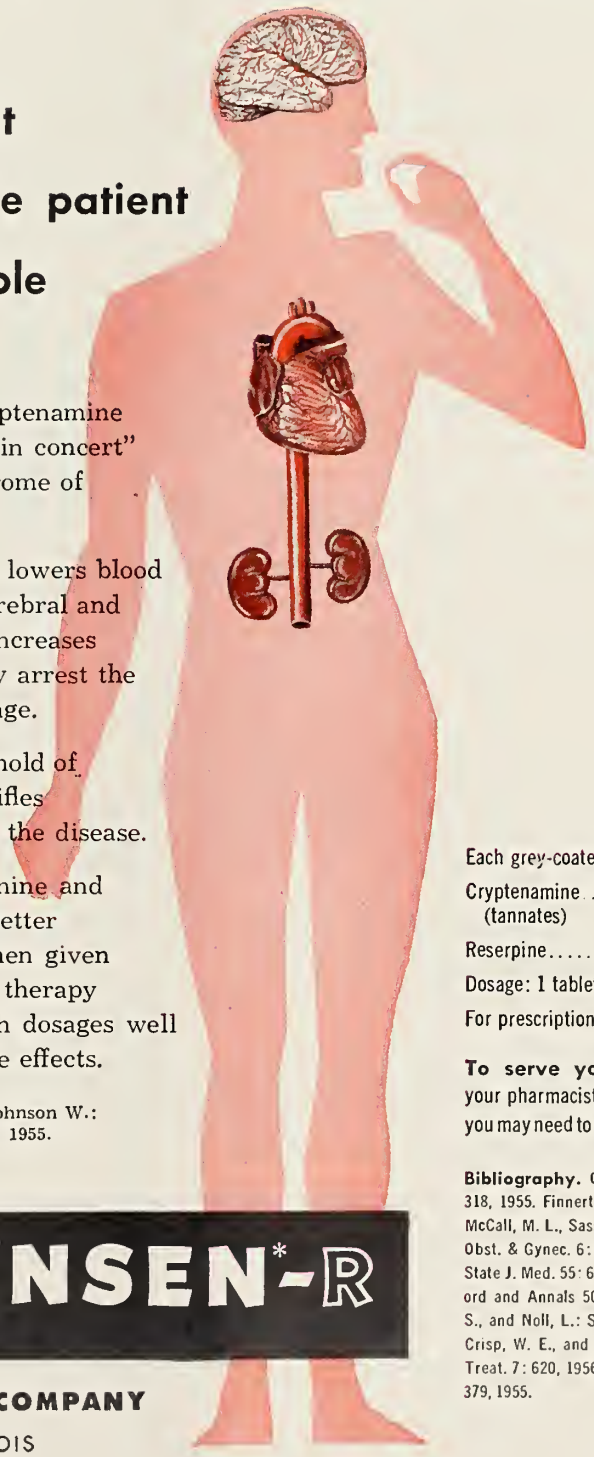

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†Cohen, B. M.; Cross, E. B., and Johnson W.: Am. Prac. & Digest Treat. 6: 1030, 1955.

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Bibliography. Orgain, E. S.: Postgrad. Med. 17: 318, 1955. Finnerty, F. A.: Am. J. Med. 17: 629, 1954. McCall, M. L., Sass, D. K., Wagstaff, C., and Cutler, J.: Obst. & Gynec. 6: 297, 1955. Cohen, B. M.: New York State J. Med. 55: 653, 1955. LaBarbera, J. F.: Med. Record and Annals 50: 242, 1956. Voskian, J.; Assali, N. S., and Noll, L.: Surg., Gynec. & Obst. 102: 37, 1956. Crisp, W. E., and McCall, M. L.: Am. Prac. & Digest Treat. 7: 620, 1956. Finnerty F. A.: Am. J. M. Sc. 229: 379, 1955.

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California MEDICINE

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WANTED AT ONCE: Ambitious, energetic, hard-working, young physician, to assist in busy Allergy and General Practice. $1,000 a month to start, periodic raises, with partnership later. San Fernando Valley. Write details of qualifications to Box 93,400, California Medicine.

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WANTED: Physician in internal medicine. Ultra modern, fully accredited, 100 bed hospital. Chiefs of medicine and surgery are diplomates. Salary up to $12,900. Quarters available. Apply Dr. Robertson, Manager, VA Hospital, Miles City, Montana.

(Continued on Page 50)

Laos Mission

Medicine can be used as a weapon of foreign policy by helping to liberate people from the "tyrannies of ignorance and disease," a young American doctor working in Southeast Asia said recently.

In a letter published in a recent issue of the *Journal of the American Medical Association*, Dr. Thomas A. Dooley brought American doctors up-to-date on his medical mission to Laos, a kingdom in Indo-China.

As a Navy officer, Dr. Dooley supervised a medical camp for refugees during the 1954-1955 evacuation of Viet-Nam. Last fall he returned to that area with three former Navy corpsmen to help the people medically and to show them what Americans are like.

An editorial in the same American Medical Association *Journal* said that Dr. Dooley, who expects to return eventually to private practice in the United States, feels "that physicians have a special calling to help underdeveloped communities of the world which are threatened by communism."

It added, "Dr. Dooley's experience and high purpose may inspire other young men to go to parts of threatened Asia to take part in this great medical mission and to be salesmen for democracy."

Dr. Dooley, whose home is in Washington, D. C., and his three assistants, Norman Baker, Berlin, N. H., Peter Kessey, Port Arthur, Texas, and Dennis D. Shepard, Salem, Ore., are working in the village of Vang Vieng, an eight-hour jeep trip north of the capital, Vientiane.

They have a three-room, "25-mat" hospital. He noted that the bamboo mats on the floor are not so difficult for the patient but "play havoc on an Anglo-Saxon physician's back pain."

The typical day of the "Mekong Medicine Men" starts at dawn with a breakfast of "yesterday's pay" —fried eggs. By the time they reach the hospital, 50 people are waiting. Ward rounds and sick call include such medical problems as malaria, machete-inflicted wounds of the legs (the people hack their existence out of the jungle), obstetric problems, some nutritional diseases springing more from ignorance than famine, chronic leg ulcers, and arthritis.

Some "rather esoteric" diseases present themselves, such as "tingling over the right knee cap that rapidly leaps into the nostril, and is present only when the sun sets every night," he said.

Three Laos nurses always help the Americans, since it increases their prestige and education and keeps the Americans from blundering too badly over such words as "chep hua" which can mean "headache" or "criminally insane."

In the afternoon two men go into the surrounding mountains to treat tribes, while the others hold classes in Vang Vieng. One is for 300 children on hygiene and sanitation; the second is a midwifery course for 15 girls from 15 different villages; and

(Continued on Page 54)

American Medical Association Committee Helps TV, Radio Producers

(Continued from Page 18)

There seem to be limitless varieties of medical story lines, the article said. For that reason many branches of the profession are represented in the committee:

Dr. Gerald D. Dorman, chairman of the New York committee, has an industrial health practice, while his colleagues—Drs. Henry Fineberg and Renato Azzari—are respectively a hospital administrator and a surgery professor.

Co-chairman Robert Gentry in Los Angeles is a chest surgeon. Committee members there are Drs. Vincent Askey (surgeon, speaker of the A.M.A. House of Delegates), Dudley Manchester Cobb Jr. (general practitioner), Eugene F. Hoffman (urologist), Richard O. Myers (pathologist), Marcus H. Rabwin (surgeon), Charles C. Stehley (internist), James F. Regan (surgeon), and Edward T. Tyler (infertility specialist).

The *Journal* editorial said about the committee's work, "One result of this voluntary liaison between the medical profession and the entertainment industry is a sharpened awareness of health among television, movie, and radio audiences—and a clearer public understanding of medicine's public service role. This, in turn, is whetting the public appetite for more programs about doctors and their work."

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Each Multiple Compressed Tablet of MEPROLONE provides the inseparable antiarthritic, antirheumatic benefits of:

1. *Prednisolone buffered*—the newest and most potent of the "predni-steroids" for prompt relief of joint pain and arrest of the destructive inflammatory process.

2. *Meprobamate*—the newest and safest of the muscle-relaxant tranquilizers for profound relaxation of skeletal muscle in spasm.

Tolerance to this combination is good because there is little likelihood of sodium retention, potassium depletion or gastric distress with buffered prednisolone, and meprobamate rarely produces significant side effects in therapeutic dosage.

An additional important therapeutic benefit, often overlooked, stems from the tranquilizing action of meprobamate. This component of MEPROLONE relieves mental tension and anxiety so often manifest in arthritics, making them more amenable to other rehabilitation measures.

INDICATIONS: A wide variety of conditions, in which four symptoms predominate: *a*) inflammation *b*) muscle spasm *c*) anxiety and tension *d*) discomfort and disability; i.e., rheumatoid arthritis, rheumatoid spondylitis (Marie-Strümpell disease), Still's disease, psoriatic arthritis, osteoarthritis, bursitis, synovitis, tenosynovitis, myositis, fibrositis, fibromyositis, neuritis, acute and chronic low back pain, acute and chronic primary and secondary fibrositis and torticollis, intractable asthma, respiratory allergies, allergic and inflammatory eye and skin disorders (as maintenance therapy in disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis and scleroderma

Therapeutic benefits of MEPROLONE compared with traditional antiarthriti

	relieves pain	suppresses inflammation	relaxes muscle	eases anxiety	imparts sense of well-being
Salicylates	✓	✓			
Muscle relaxants			✓1		
Tranquilizers				✓1	
Steroids	✓	✓			✓
MEPROLONE	✓	✓	✓	✓	✓

1. Meprobamate is the only tranquilizer with muscle-relaxant action.

SUPPLIED: Multiple Compressed Tablets in bottles of 100 in two formulas as follows: MEPROLONE-1—1.0 mg. of prednisolone, 200 mg. of meprobamate and 200 mg. of dried aluminum hydroxide gel. MEPROLONE-2—provides 2.0 mg. of prednisolone in the same formula.

now *". . . care of the man rather than merely his stomach."*

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HUMAN GASTRIC FUNCTION

"Milpath"

Miltown® + *anticholinergic*

controls gastrointestinal dysfunction

because it **cares for the man**

At the cerebral level

the tranquilizer *Miltown* in "Mil*path*" controls the psychogenic element in G. I. disturbances. (Miltown does not produce barbiturate loginess or hangover.)

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for duodenal ulcer • gastric ulcer • intestinal colic
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Formula:
Miltown® (meprobamate) 400 mg. (2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate)
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U. S. Patent 2,698,325.

WALLACE LABORATORIES New Brunswick, N. J. *Literature and samples on request*

Health Problems Occurring from Household Chemicals, Including Drugs

IRVIN KERLAN, M.D., Washington, D.C.

The lack of identification of hazardous ingredients and precautionary labeling on the wide variety of small, packaged chemical items in general use and the influence of this lack of identification on their careless and improper handling and storage is the underlying theme of this report. The Board of Trustees of the American Medical Association recently authorized the Committee on Toxicology to develop model legislation on labeling of the many possibly harmful chemicals not now so regulated. It was recommended that interested organizations and individuals with experience in this problem be invited to collaborate. A legislative conference to consider the formulation of a uniform chemical label law will be held on completion of a current study of existing statutes pertaining to the labeling of chemicals.

BERNARD E. CONLEY, Ph.D., *Secretary, Committee on Toxicology*

In 1955[1] solid and liquid substances were designated as the causative agents in 1,431 deaths due to accidental poisoning. Gases and vapors were responsible for 1,163 deaths. Suicide from self-inflicted poisoning from solid and liquid substances and gases accounted for 3,429 additional deaths. For practical purposes these 6,023 deaths occur in and about the home. Of the 1,431 accidental poisonings by liquid and solid substances, 358 occurred in children under 5 years of age; 44 of the 1,163 deaths due to gases and vapors were found in children under 5 years.

These imposing statistics do not give us an absolute picture of the problem; the number of nonfatal poisonings is estimated to be 100 to 150 times the number of fatalities. It should be recognized, too, that, although the present death rate for all types of poisoning from solid and liquid substances is about one-third that of 50 years ago, the total number of preventable deaths continues to be a large and impressive one.

PREVENTION

In evaluating the persistently high number of accidental poisonings (from household products) that have a causal relationship to environmental factors, it becomes apparent that many individuals do not regard as harmful many liquid or solid substances that they know are inedible. For example, physicians appreciate this fact when called to treat the child who has ingested furniture polish, left accessible by his mother, who did not know that such polish may be capable of poisoning.

This unawareness may be caused by a lack of informative and precautionary labeling on numerous

(Continued on Page 33)

Associate Medical Director and Chief, Research and Reference Branch, Division of Medicine, Food and Drug Administration, Department of Health, Education, and Welfare.

Based on an address read before the Second Symposium on Hazardous Household Chemicals and Agricultural Poisons, sponsored by the Committee on Toxicology and the Committee on Pesticides, American Medical Association, at the annual meeting of the American Association for the Advancement of Science, Atlanta, Ga., Dec. 29, 1955.

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topical ointment

NEOMYCIN + the first water-soluble dermatologic corticoid

outstanding availability, penetration, therapeutic concentrations and potency —without systemic involvement. In 1/2-oz. and 1/6-oz. tubes, 0.5% neomycin sulfate and 0.5% ethamicort (MAGNACORT).

for inflammation without infection MAGNACORT* topical ointment

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In 1/2-oz. and 1/6-oz. tubes, 0.5% ethamicort (hydrocortisone ethamate hydrochloride).

PFIZER LABORATORIES Pfizer *Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York*

*Trademark

Health Problems Occurring from Household Chemicals, Including Drugs

(Continued from Page 32)

household items to identify their composition; their potentialities for harm, if any; directions for safe use; and methods of emergency treatment in case of misuse. Lack of this type of information on the many different items available in every pantry, medicine cabinet, basement, garage, and elsewhere around the home may serve as an important basis for careless or improper handling or storage. The Committee on Toxicology of the American Medical Association estimates that there are a quarter of a million different brand-name products available.

Inadequate information on the label is an important gap in protection of the consumer against accidental poisoning by household products because it is a major obstacle to the successful attack on the problem. Not only does the failure to label household articles informatively create circumstances that lead to accidents, but it frequently enhances their seriousness by complicating proper treatment. Physicians or others providing emergency treatment need to know the identity of the offending substance. Lack of this information frequently results in the use of vague and indefinite terminology and consequently poor case-recording. Thus, unsatisfactory treatment of the patient may occur as well as inaccurate statistics, which tend to obscure the problem and thus complicate its solution.

To ascertain the contents of potentially harmful household products in order to assist physicians, pharmacists, and others who seek such information in emergency situations, Rodman[2] conducted an extensive survey of various manufacturers regarding household products not covered by existing federal laws. He concluded that there is need for more adequate labeling of articles concerning contents and precautions against misuse as well as for prompt and continued education of users.

HAZARDOUS HOUSEHOLD ITEMS

Household articles may be readily separated into two groups on the basis of whether their labeling and packaging are subject to federal statutory control in the interest of protection of the consumer against accidental poisoning (see table). Certain states and municipalities have taken forthright steps to control some of these offending items.

Drugs and disinfectants intended for use on man and animals are subject to the Federal Food, Drug, and Cosmetic Act of 1938, enforced by the Food and Drug Administration. Disinfectants for inanimate objects and pesticides are subject to the Insecticide, Fungicide, and Rodenticide Act of 1947, enforced by the United States Department of Agriculture. Recently the FDA procedure for setting safe tolerances

(Continued on Page 44)

WHILE YOU WERE OUT

Message: Mrs. Amadeo phoned that the prescription actually seems to irritate her little boy's ivy poisoning. He may be sensitive to the local anesthetic, so I played it safe and suggested she use Calmitol until you returned.

B.N.

TIME: 9:10 a.m.

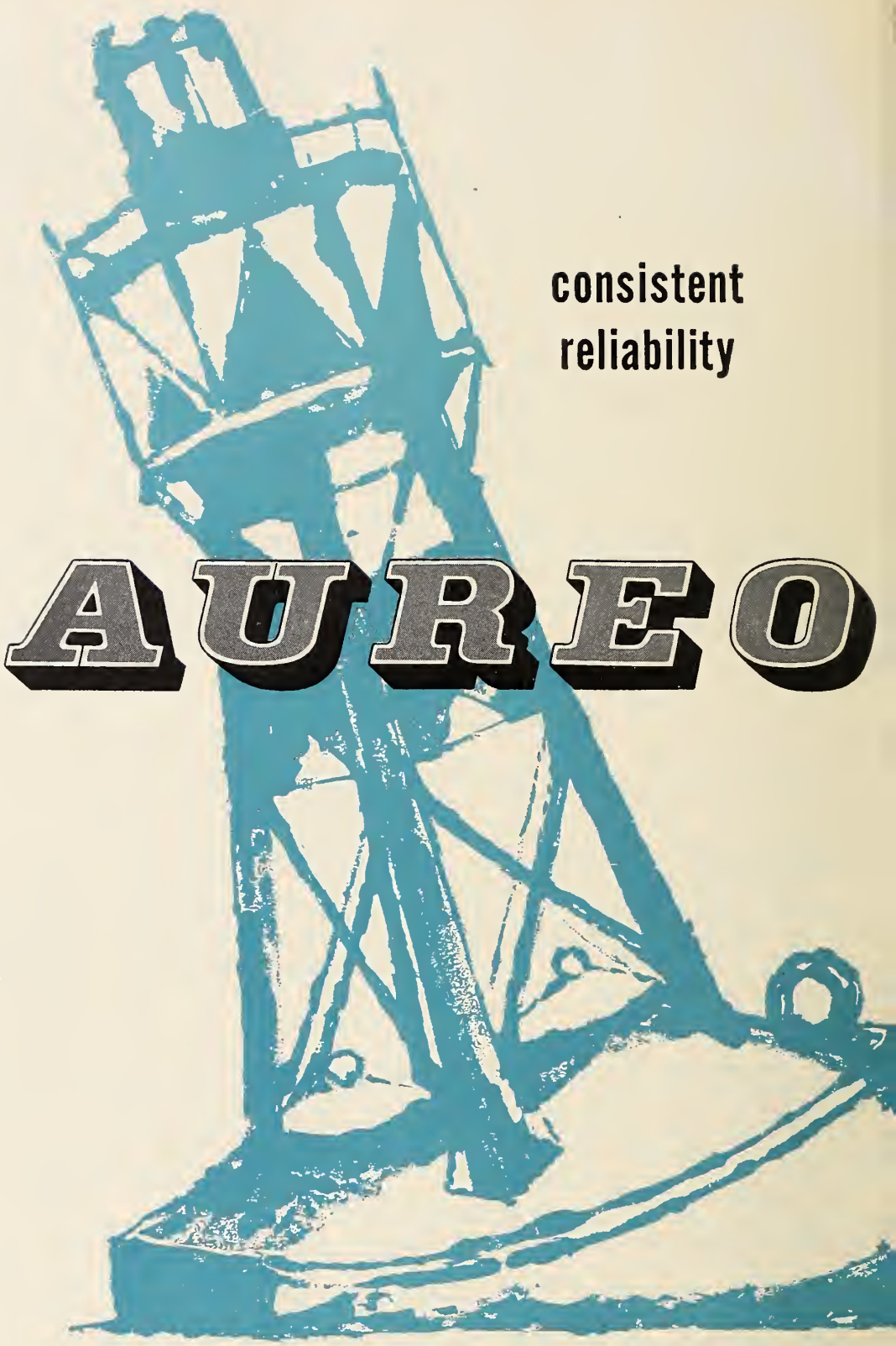
TELEPHONED	X	PLEASE CALL		WILL CALL AGAIN	

I called Mrs. Amadeo last night after hours. Calmitol appears to relieve the itching without complications and I told her to continue it. How is our office supply of Calmitol?

E.C.N.

* CALMITOL® is the non-sensitizing antipruritic ointment supplied in 1½-oz. tubes and 1-lb. jars, and (liquid) 2-oz. bottles by THOS. LEEMING & CO., INC., New York 17.

Each ounce contains: Hyoscyamine oleate (equivalent to 0.028 mg. hyoscyamine alkaloid), 0.055 mg.; Alcohol, 1.4 cc.; Camphor, 0.16 Gm.; Ether, 0.5 cc.; Chloroform, 0.19 cc.; Chloral hydrate, 0.13 Gm.; Menthol, 0.17 Gm.; in a suitable ointment base.



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• "I find it easy to keep patients using the drug continuously and faithfully. I feel sure this is due to the desirable effect of the tranquilizing drug."[5]

• "The results in several people who were previously on belladonna-phenobarbital preparations are particularly interesting. Several people volunteered that they felt a great deal better on the present medication and noted less of the loginess associated with barbiturate administration."[6]

• PATHIBAMATE . . . "will favorably influence a majority of subjects suffering from various forms of gastrointestinal neurosis in which spasmodic manifestations and nervous tension are major clinical symptoms."[7]

• "In the patients with functional disturbances of the colon with a high emotional overlay, this has been to date a most effective drug."[5]

References: 1. Borrus, J. C.: *M. Clin. North America,* In press, 1957. 2. Gillette, H. E.: *Internat. Rec. Med. & G. P. Clin.* 169:453, 1956. 3. Pennington, V. M.: *J.A.M.A.,* In press, 1957. 4. Cayer, D.: Prolonged Anticholinergic Therapy of Duodenal Ulcer. Am. J. Dig. Dis. 1:301-309 (July) 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal Communication to Lederle Laboratories. 7. Bauer, H. G. and McGavack, T. H.: Personal Communication to Lederle Laboratories.

Supplied: Bottles of 100 and 1000

Administration and Dosage: 1 tablet three times a day at mealtimes and 2 tablets at bedtime. Full information on PATHIBAMATE available on request, or see your local Lederle representative.

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Pathibamate #100
Sig: 1 tab. t.i.d. at mealtime.
2 tabs. at bedtime.

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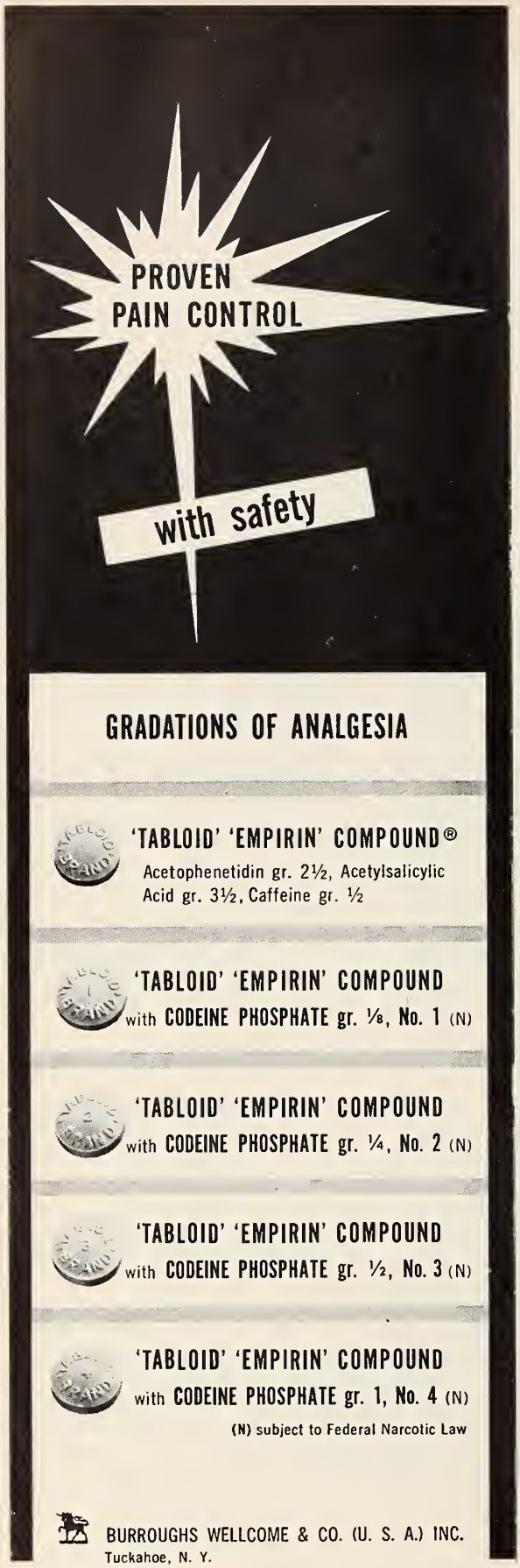


Health Problems Occurring from Household Chemicals, Including Drugs

(Continued from Page 33)

for pesticides on crops was revised and simplified. The 12 caustic and corrosive acids and alkalis in certain concentrations designated in the Federal Caustic Poison Act of 1927 are also controlled by the FDA. The latter legislation was achieved through the efforts of the American Medical Association. Although many new chemicals have been introduced since the enactment of the law, it has never been amended to provide for these developments.

Status of Household Articles Under Federal Laws Regarding Identity of Contents and Precautions in Labeling

Regulated	Nonregulated
Drugs	Cosmetics
	Heating, power, and lighting fuels
Disinfectants	Household care and repair articles, including water repellents, leather dressings, preservatives
Economic poisons (pesticides)	Household cleansers (other than acids and alkalis), including soaps and other detergents, solvent cleaning fluids, polishes and waxes, deodorizers
Caustic and corrosive acids and alkalis	Paint and accessories, including thinners, removers
	Miscellaneous items, such as toys, inks and dyes, hobby supplies, novelties

All the federal laws cited have the common requirement that the active ingredients be declared on labels by their common names. together with directions for use and warnings against injury under specified conditions of use. In addition, the 12 caustics and corrosives and those pesticides (economic poisons) deemed highly toxic to man must carry the poison legend and directions for emergency treatment.

DRUGS

Among the drugs, methyl salicylate, aspirin, certain other salicylates, and iron deserve to be specially mentioned, particularly with regard to poisoning in children.

Since methyl salicylate has a long history of fatalities caused by accidental ingestion, the FDA requires that the label of any drug containing over 5 per cent of this chemical bear a conspicuous warning that it be kept out of the reach of children. This warning has been widely adopted. With proper attention to this admonition, a reduction in serious poisonings and deaths from misuse of this drug should be achieved.

Aspirin and other salicylates are among the sub-

stances most frequently misused by children. This fact is revealed by morbidity statistics compiled by the poisoning control centers, sponsored by the American Academy of Pediatrics and other health groups, and by mortality statistics of the National Office of Vital Statistics. On February 14, 1955, the FDA invited the Medical Advisory Panel on the Accidental Ingestion and Misuse of Salicylate Preparations by Children to consider this problem and its solution in the interest of protecting the public health. As a result, the following recommendations were made concerning the labeling that should be employed for salicylate preparations to meet the requirements of certain provisions of the Federal Food, Drug, and Cosmetic Act. A period of six months from the date of publication[3] was allowed for modification of existing labeling to comply with these requirements.

1. The labels of such preparations should carry a warning, such as the following:

"Warning: Keep out of the reach of children" or "Warning: Keep this and all medications out of the reach of children."

Some manufacturers seem to agree with the broad educational and constructive aspects of this latter caution and are voluntarily considering its use on many other types of medications.

2. In lieu of specific dosage recommendations for children under 3 years of age, the directions for oral use of salicylate preparations should bear a statement such as:

"For children under 3 years of age consult your physician."

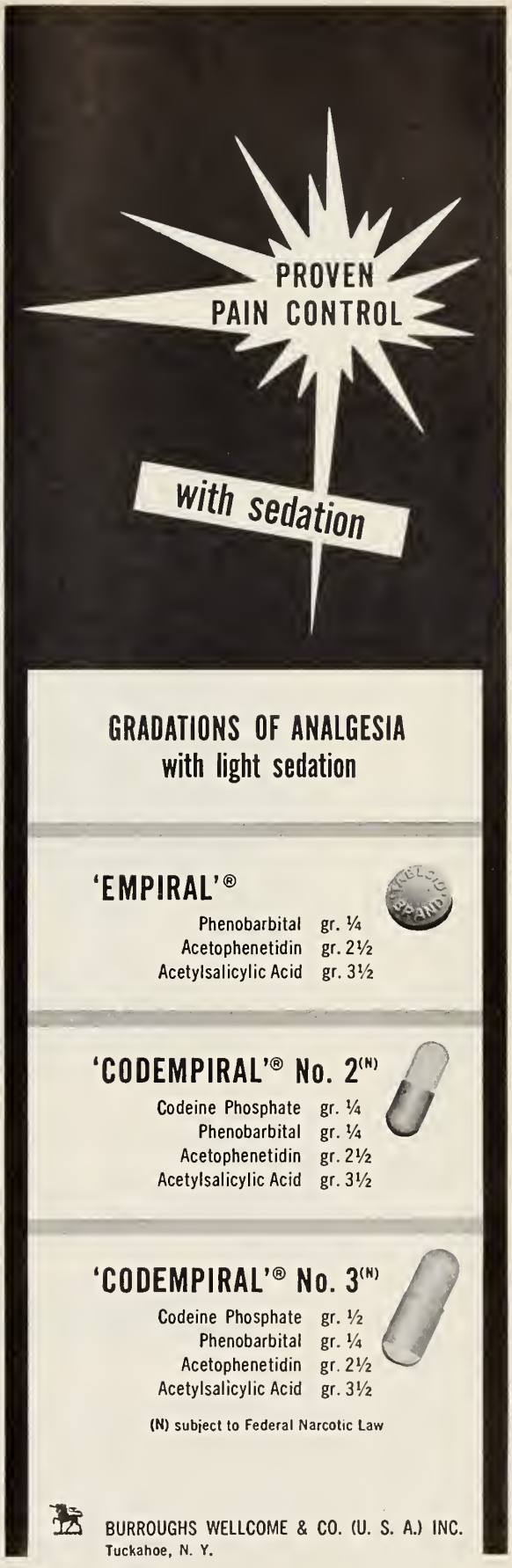
Some physicians who have attributed the major problem of salicylates not only to their widespread availability but also to the introduction of "baby size" or "candy type" aspirin have questioned the philosophy of "candy" medication.[4]

Iron sulfate is generally regarded as one of the safest medicaments to have on hand in the home. Because of its ready availability, however, serious poisonings and deaths have been reported within recent years, with a frequency that has become the basis for much concern. The antihistaminics and other recently introduced drugs are misused by children and appear as causative agents in poisonings. Only when it is widely recognized that drugs should be used carefully and stored out of the reach of children may we expect progress in curtailing the present incidence of accidental poisoning.

PESTICIDES

With the rapid general introduction of potent new insecticides and rodenticides after World War II, the already sizable pesticide problem was increased. Trouble has been caused in the past by the moth

(Continued on Page 50)



THERE'S some mighty shrewd wisdom in what Joe says. But human nature being what it is, far too many of us still seek medical advice from those who aren't qualified to give it.

No matter what's bothering you . . . constant fatigue, nerves on edge, recurring aches and pains . . . it is never wise to stay away from your doctor in the hope that you'll run into somebody who will know "just what's best" for your trouble. In fact, it's often dangerous to accept an amateur's "sure cure."

Seek a friend's advice, if you wish, on almost any other problem. But when it comes to your health, and that of your family, by all means don't let anyone other than a physician advise you.

By seeing your doctor at the first sign of trouble, you will not only avoid the hazards of amateur medical advice, but chances are you will save time and money in the long run. In fact, prompt and proper medical care may well turn out to be one of the biggest bargains ever to come your way

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Working with your physician, your pharmacist and your hospital to make modern medical care one of the most rewarding investments of your life.

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A Better Antihypertensive

"We prefer to use alseroxylon (Rauwiloid)

since it is less likely to produce excessive fatigue and weakness than does reserpine."[1] Up to 80% of patients with mild labile hypertension and many with more severe forms are controlled with Rauwiloid alone.

1. Moyer, J.H.: J. Louisiana M. Soc. *108*:231 (July) 1956.

A Better Tranquilizer, too

"...relief from anxiety resulted in generally increased intellectual and psychomotor efficiency with a few exceptions."[2] Rauwiloid is outstanding for its *nonsoporific* sedative action in a long list of unrelated diseases not necessarily associated with hypertension but burdened by psychic overlay.

2. Wright, W.T., Jr., et al.: J. Kansas M. Soc. *57*:410 (July) 1956.

Dosage: Merely two 2 mg. tablets at bedtime. After full effect one tablet suffices.

Best first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

Rauwiloid®+Veriloid®

In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid (alseroxylon) and 3 mg. Veriloid (alkavervir). Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid®+ Hexamethonium

In severe, otherwise intractable hypertension this single-tablet combination provides smoother, less erratic response to hexamethonium. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, ½ tablet q.i.d.

Riker LOS ANGELES

CLASSIFIED ADVERTISEMENTS

(Continued from Page 22)

PHYSICIANS WANTED *(Continued)*

WANTED: ORTHOPAEDIC SURGEON, board eligible, to assist Board Orthopedist, younger man, military exempt. California. Box 93,420, California Medicine.

WANTED—STAFF PHYSICIAN, 200-bed Tbc. Hospital. California license and United States citizenship required. Family maintenance on grounds. Write Superintendent, Arroyo Del Valle, Livermore, California.

STAFF PHYSICIAN, full time, wanted for 270-bed, chest disease hospital, approved for residency training in pulmonary diseases. Located in Murphys, California. Starting salary $700 per month, plus home on grounds, furnished. Available July 1, 1957. Must have California license. Apply: Superintendent, Bret Harte Sanatorium, Murphys, California.

SITUATIONS WANTED

INTERNIST, 32, married, Board Qualified with special interest pulmonary diseases, wishes permanent association with established Internist or group in California, location other than metropolitan Los Angeles. California license, military obligation completed. Reliable, congenial, willing to work hard. Personal interview requested. Available July 1, 1957. Box 93,310, California Medicine.

GENERAL SURGEON—31, married, Board Eligible, military service completed, California license, available September, 1957, desires location alone, with surgeon, or group. Box 93,445, California Medicine.

PHYSICIAN SURGEON, age 36, graduate Grade A school, varied postgraduate training and general practice experience, desires association, or share space arrangement, in growing community with open staff hospital. Member of California Medical Association and now have locum tenens practice Bay Area. Box 93,365, California Medicine.

SURGEON—32, married, children, Board certified. On staff government hospital. Available July 1, 1957. Desire location for group, association, or individual practice. Box 93,450, California Medicine.

RESIDENTS WANTED

WANTED: Resident Physician for 150 bed General Hospital. Excellent opportunity for experience in general medicine and surgery. Salary $600.00 and up (depending upon qualifications) per month plus two (2) bedroom house on hospital grounds. Apply to John W. Bristow, M.D., Medical Director, Madera County Hospital, Madera, California.

RESIDENCIES IN OBSTETRICS AND GYNECOLOGY—First and third year residency available July 1, 1957, in 225-bed hospital with large clinic service. Hospital approved for two year residency. Apply St. Luke's Hospital, attention Joseph L. Zem, Director, 1580 Valencia Street, San Francisco, California.

SENIOR RESIDENT wanted Department Internal Medicine accredited County Hospital located 28 miles south of San Francisco. Excellent teaching program. Stipend $400 plus maintenance. Must be citizen and eligible for State Board examinations. Apply J. Paul Sweeney, M.D., 222 39th Avenue, San Mateo, California.

LOCUM TENENS WANTED

2 LOCUM TENENS FOR GROUP; June 17 through September, 1957. Pediatrician or GP; Internist or GP. Gallatin Medical Group, 10720 South Paramount Boulevard, Downey, California.

GENERAL PRACTITIONER near San Francisco desires Locum Tenens for two months—June, July, August, or September. California license required. Box 93,430, California Medicine.

(Continued on Page 60)

Health Problems Occurring from Household Chemicals, Including Drugs

(Continued from Page 45)

repellents containing camphor, naphthalene, or *p*-di-chlorobenzene; the roach poisons containing fluorine; and the rat poisons containing arsenic, phosphorus, or thallium. Recently the so-called organic phosphorus insecticides, chlordane, chlorophenothane (DDT), sodium fluoroacetate (1080), and others, have been responsible for deaths and severe poisonings despite the stringent provisions of existing legislation.

ACIDS AND ALKALIS

Deaths and serious poisoning from lye and other caustic and corrosive acids and alkalis covered by the Federal Caustic Poison Act have declined markedly in most sections of the country. This decrease is attributable in great part to informative labeling and effective law enforcement. Because of certain deficiencies in the law itself as well as social and economic factors beyond statutory control, this group of substances continues to be a problem in certain areas among certain groups. Lye continues to be one of the most frequently offending agents among low-income groups in the South, where the home manufacture of soap is quite common. Several years ago pediatricians in North Carolina tried without success to have its sale for consumer use banned entirely in that state.

PAINTS, CLEANSERS, COSMETICS AND MISCELLANEOUS AGENTS

Since paints, cleansers, cosmetics, and miscellaneous agents have much in common with regard to ingredients and labeling, we can consider them together. The labeling in none of these groups is required by federal legislation to reveal information concerning composition or hazards arising with their use or misuse. In those instances in which manufacturers supply such helpful information it is done voluntarily, in compliance with some industry code, or according to local regulations. For example, the American Standards Association issued a standard[5] limiting the lead content in paint for interior use in dwelling units or on furniture or toys. The amount must not exceed 1 per cent of lead of the total weight of the contained solid.

Because of lack of declaration of components, especially the potentially harmful ones, this particular group of products presents some of the greatest problems. Among the items of concern are the solvents, including petroleum products, carbon tetrachloride, and benzene. The serious and fatal poisonings from the inhalation of cleaning fluids containing carbon tetrachloride prompted the New York City Health Department to add a new section to its sanitary code requiring that cleaning fluid containing

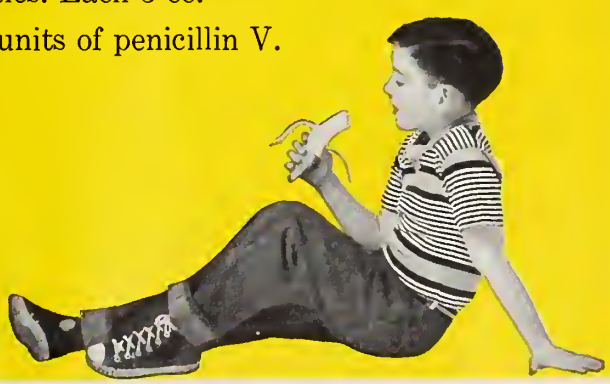
(Continued on Page 60)

penicillin V

cillin®-V

to-take forms

In SUSPENSION . . . Little patients get a delicious, banana flavor. Ready-mixed, COMPOCILLIN-V Suspension comes in 80-cc. bottles. Each 5-cc. teaspoonful represents 300,000 units of penicillin V.



Abbott

CLASSIFIED ADVERTISEMENTS

(Continued from Page 50)

PRACTICES FOR SALE

ACTIVE GENERAL PRACTICE in actively growing community in Kern County. Refrigerated, individual office building for lease or sale. Brief association considered. Reason for sale—specialization. Box 93,425, California Medicine.

FOR SALE: No capital needed. General Practice. Southern California —near beaches. All overhead paid by owner. 40% to owner each month for one year, then option to buy for $2,500.00 (with terms). Should gross $30,000.00 first year. Box 93,455, California Medicine.

ACTIVE EENT PRACTICE, established 26 years, in growing town of 60,000 near Los Angeles. Reason for selling I am retiring. Will introduce. Price reasonable, terms can be arranged. Box 93,415, California Medicine.

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Health Problems Occurring from Household Chemicals, Including Drugs

(Continued from Page 50)

carbon tetrachloride be prominently labeled together with warnings against its misuse. Later the departments of health of the state of New York and the city of New York jointly enacted amendments to their sanitary codes, requiring that hazardous substances in any product in general use be revealed on the label and adequate warnings provided against their misuse.

The question may arise why cosmetics are not included with drugs as controlled by the Food, Drug, and Cosmetic Act. Although the law protects the consumer from dangerous cosmetics under customary conditions of use and requires that the label bear a statement of quantity of contents and the name and address of the manufacturer or distributor, it does not require a declaration of ingredients.

PREVENTION AND CONTROL OF ACCIDENTAL POISONING

The conviction that accidental poisoning can be prevented through education, adequate labeling, and continued attention to collection of accurate statistics on morbidity and mortality has encouraged health departments, medical societies, major insurance companies, the American Red Cross, the National Safety Council, and others to undertake protective measures.

Through the concerted efforts of the American Academy of Pediatrics and local health departments, poison control centers have been set up and are operating in 15 cities in Florida and the following other cities:

Albany, N. Y., Atlantic City, N. J., Baltimore, Boston, Buffalo, Chicago, Denver, Durham, N. C., Grand Rapids, Mich., Harrisburg, Pa., Indianapolis, Kansas City, Mo., Lancaster, Pa., Louisville, Ky., Memphis, Tenn., Milwaukee, Montclair, N. J., Newark, N. J., New Bedford, Mass., New York, Nutley, N. J., Oklahoma City, Phoenix, Ariz., Rochester, N. Y., Seattle, Springfield, Ill., Syracuse, N. Y., Washington, D. C., and Worcester, Mass.

Other cities are actively developing poison control centers. Through these centers the attending physician can obtain information concerning the composition of substances involved in poisonings as well as methods of treatment. In turn, he can contribute to the knowledge of substances that are accidentally ingested and acquaint parents with home-safety measures. As this program has progressed and extended nationwide, an awareness has developed of the need for a national center to furnish information to the physician concerning the composition of household articles, collect and evaluate reports of poisoning, and distribute information regarding preventive procedures.

The American Medical Association is devoting special attention to the correction of the accidental misuse of chemical agents found in and around the home through its Committee on Toxicology. The Committee has undertaken a five-point program to

(Continued on Page 66)

California MEDICINE

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Presidential Address

DONALD A. CHARNOCK, *M.D.*, Los Angeles

IT IS A GREAT PRIVILEGE to greet you as the California Medical Association completes its one hundred and first year of service to the people and to the medical profession of California.

We have passed through some heavy seas during the past year. At times we have seemed to be moving by momentum and steering by dead reckoning, but we have brought our ship into port on schedule and we are now ready for the yearly overhaul and reconditioning which will make it possible to renew our voyage for the next year, better equipped, in sounder condition, and ready for new and more fruitful explorations.

The Association has had a busy year. The Commissions and their Committees have functioned well. Their manifold activities have been summarized in the Pre-Convention Reports. They deserve more than a casual perusal. They modestly relate the tremendous thought and effort which has been given to many problems and without any mention of the long man hours of work required to bring them to fulfillment. I can assure you that none of this has been easy. Some of these difficulties have required "blood, sweat and tears." Each member of the California Medical Association owes a deep gratitude to the many tireless workers.

In all of these efforts, there has been cooperation and excellent integration between the various Committees. Medicare is a good example of this. As you know, Public Law 569 was passed June 8 of last year and became effective December 7. In this short period of time, the immediate negotiations were handled by the Committee on Government Financed Medical Care. Backed by the relative value schedule, developed by the Committee on Fees and with the active cooperation of C.P.S. with its vast reservoir of experience in administration and watched over carefully by our astute and capable legal counsel, we have been successful in obtaining a contract which, although far from perfect, is a significant accomplishment. It is interesting that many state associations have used our relative value study as a basis for their negotiations.

Because of the large number of servicemen on active duty in California, this program has grown rapidly. As of April 1, some 15,490 dependents had received professional services, and private physicians had received payments totaling $693.259.

The completion of transactions regarding blood banks in Fresno brings a workable agreement within that area and a sense of deep satisfaction to those who bore the responsibility for the decisions. We hope that from this experience will come a new orientation with regard to blood banks and county medical organizations.

The work with medical students, interns and residents has been very gratifying. I am sure these young physicians now enter practice with a wider knowledge and better understanding of organized medicine and its problems.

While the work with students necessarily falls within the two larger medical centers, each commu-

Address of the President given before the House of Delegates at the 86th Annual Session of the California Medical Association, Los Angeles, April 28, 1957.

nity can help with the orientation of interns and residents. Invite these young physicians to your meetings. Let them know the problems that are before you. You will gain much from the spiritual transfusion of their youth and enthusiasm. And don't forget that today many of these young folks are married. Encourage your auxiliaries to invite the wives as their guests to their meetings. The few dollars you spend in this friendly and informative hospitality will be greatly appreciated and will be returned many fold. It is a pleasure to commend the San Francisco Association for the outstanding work they have done in welcoming to their headquarters their students and house staffs and the wives of these trainees. I attended one of these events and was very much impressed by their program for the young physicians. I hope this may be expanded throughout the state.

The California Medical Association's gift of $132,-981 to the American Medical Education Foundation was presented to Dr. Dwight Murray at the American Medical Association House of Delegates meeting in Seattle. This was gratefully acknowledged by the Foundation and was allocated in four parts: $35,461.60 to each of our three privately supported medical schools and $26,596.20 to the General Fund.

During the past year the deans of each of our five medical schools have been invited to sit with the Council at meetings. I am sure that the deans were thereby alerted to many questions which their students will face when they enter practice. The advice and help of these gentlemen who are responsible for medical education within our state has been very helpful to the Council and has made for a better understanding of many of our problems.

The Medical Review and Advisory Board is to be commended for its exhaustive study upon the very vexing malpractice problem. They have come up with some concrete answers to this situation. Many more will have to be solved before we have the difficulties under control. Continuation of this study is essential.

In this connection, the joint meetings with members of the Bar Associations are proving very helpful. Several county medical societies are already meeting with members of the Bar. This is being activated at the state level.

Our continued work with the school health programs is bearing fruit and establishing an excellent understanding with the educators of our state. This fine example of good public relations is making new friends for organized medicine in an area which has been heretofore neglected.

Speaking of public relations, the new *Newsletter* is doing an outstanding job of bringing to the members and their wives the manifold activities of our Association.

On the legislative front, the Legislative Committee works around the clock. It is doing a great job. The Public Health League, with 25 years of experience behind it, continues to be an effective instrument for good medicine. Again, the financial support of all members of the C.M.A. is earnestly recommended to this efficient organization.

California Physicians' Service has experienced a healthy growth in membership and, more important, has done a better job than ever before in providing benefits for its members who are your patients. More than $2,000,000 was paid every month during the last fiscal year to physicians and hospitals for services provided to C.P.S. members. Perhaps the most important fact of all is that through the functioning of advisory committees in your own county medical societies, better liaison has developed between C.P.S. and the physician, thereby carrying out one of the recommendations made by the Study Committee on C.P.S. a few years ago. Further improvements in liaison between C.M.A. and C.P.S. have resulted from the action several years ago of electing three C.M.A. Council members as C.P.S. Board of Trustee members.

A strong Blue Shield plan is vital to the freedom of medical practice, and an understanding physician is vital to Blue Shield. Because every physician in the C.M.A. has an opportunity through several methods to exercise a voice in the operation of C.P.S. and the fee schedules under which it operates, physicians can influence the pattern by which all prepaid medical care plans will operate, be they physician-sponsored and hospital-sponsored plans or commercial plans. C.P.S.-Blue Shield safeguards the basic freedoms of medical practice which are fundamental to good medical care.

It is a pleasure to commend the Woman's Auxiliary for its manifold activities. It was very heartening to note the quick response when our ladies were called upon to back legislative proposals. They are doing a wonderful job of supporting the high ideals of medical practice. We owe them our sincere felicitations.

I wish it were appropriate to "give credits" to the key workers on these many committees. You all know who they are and our thanks go out to them for their accomplishments. As the skipper of this craft. I can truly say, "Well done."

I wish I could report to you that all our issues have been resolved and that henceforth we could devote our energies to the practice of our profession. I am doubtful if this happy objective will be accomplished in the foreseeable future. We have questions which will require considered and, in some cases, courageous judgment. I do not presume

to suggest answers. That will be a matter for your earnest consideration. I would be remiss in my duty if I did not give you some of my thoughts regarding the future.

One of our problems deals with size. California is increasing in population at a dramatic rate. The medical population keeps close pace. There is no end to this growth in the foreseeable future. The increase within the rural and urban areas is almost exactly equal.

This House is constituted on a basis of one delegate for each fifty members. Each year, the number of delegates increases. This is the largest House that has ever sat in Annual Session—355 members. In the opinion of many, we have reached a size which, if it increases, will be unworkable. I believe that this House should authorize a committee to review this situation. Chapter V, Section 2, of the By-Laws would need amending if this House desires such a change. In my opinion, it should be considered in the near future.

There is at present an inequity of elected representation upon the Council. Councilors-at-Large are provided to give some amelioration to this situation. District councilors are elected by the delegates from their respective districts. Councilors-at-Large are elected by the entire House. The question immediately arises, "Whom do these Councilors-at-Large represent? To whom are they responsible?" This entire problem should be reviewed by a Study Committee, representing all areas of the state, to provide for adequate representation for all Councilor Districts upon the Council and to reevaluate the status and responsibilities of Councilors-at-Large.

Another situation which needs clarification is that of rotation of office within the C.M.A. For as long as my memory goes back, we have gone along on a "gentleman's agreement." This nebulous understanding has worked well, although at times it has been contested by those who felt it did not meet their immediate needs.

There are at present two large metropolitan areas: Los Angeles County and the area bordering on the Bay of San Francisco. The rural area north of the Tehachapi and the southern area from San Luis Obispo to San Diego comprise almost the same population. Within each of these rural areas are large and flourishing county associations.

I would respectfully recommend that a committee be authorized by this House to study this situation and come up with a broad plan of rotation. In my opinion, this will make for stability and coherence for C.M.A. and give to each of our areas more equitable representation.

The visits of the President and President-Elect to the various county societies is, in my opinion, a very valuable although taxing effort. It gives to your top officers a closer relationship and knowledge of the problems of the various county associations. It gives to each member of C.M.A. an opportunity to discuss the details of the state organization with the top officers. All of this certainly leads to a better understanding of our mutual problems. Your groups have been most cooperative and hospitable. For this, Dr. MacDonald and I extend to each of the forty component county associations our very best and sincere thanks. Should these visits be continued? From my own experience, I would say yes. When communications can be expedited to a better degree than is now possible, then it might be considered appropriate to reduce the visits to every other year.

The impact of outside agencies upon the practice of medicine has reached a new high during the past year.

In the case of the federal government, the advent of Medicare has changed some of our basic philosophies. Fortunately for American medicine, the top echelon of the federal government listened to and followed the advice of the leaders of the American Medical Association. While this program has its faults, it does give to organized medicine the opportunity to prove to the people of America, and especially to those serving us in uniform, that private medicine is capable of providing for their medical needs on an equitable basis. We must not fail in this program. This is our opportunity to prove by action what we have contended is the great potential of American medicine.

The Veterans Administration is an ever expanding bureaucracy. Completely ignoring the Hoover and Bradley reports, they go on pyramiding their activities. I know of no calling that has a larger proportion of veterans than does medicine. Practically everyone in this room has served at one time or another in the Armed Services, and yet the social planners, the bureaucrats and politicians continue expanding this program, and we, as citizens, are paying our share of the cost of this great competitive medical oligarchy.

The impact of both the federal and state governments will be felt in the Old Age Assistance and Child Care programs and the Rehabilitation program already activated at both the national and state levels.

Another one of the immediate problems facing us today is the projection of labor and management into the practice of medicine by way of welfare funds. A curious economic paradox is unfolding.

Many labor leaders and management are completely unrealistic toward medicine. Many labor leaders are thinking of medical care as outlined by

the social planners. Their ultimate goal is socialized medicine, although they now call this "social insurance." Much of management, on the other hand, still thinks of medical care as a commodity to be purchased without regard to quality or value. Many of the representatives of management do not wish to differentiate between sacks of cement or tons of steel and the intricate products of medical care. I believe it is too late to reorient either of these groups.

Their most pressing demands are for fixed, all-inclusive, fee schedules for their welfare funds. In this, both sides are completely united. They have sandbagged each other until they are groggy and now, together, they have started their pressure upon medicine. Most of their complaints stem from alleged overcharging on welfare fund claims. This merits very serious consideration. Studies have been made which indicate that some physicians look upon insurance payments as a bonus to add to their bill. This practice of the few has lost us many friends within management and increases the ammunition of labor leaders where they demand socialized medicine. There is no simple solution to this question that is acceptable to all sides. The entire philosophy of private medical practice is involved.

Much of the actual mechanics of the C.M.A. is carried out by our full-time staff both in San Francisco and Los Angeles. After years of close association with this working force, I am more and more impressed with their efficiency and know-how. They deserve the sincere gratitude of all of us. The administrative budget is small when compared with the diversity of activities that are handled. As the Association continues to grow, this work load will increase. We now have nearly 15,000 members. Within ten years, according to dependable statistics, the membership will be 20,000. It is time now to plan for the next decade and orient our activities with this in mind. This means more than merely adding a few extra employees.

The California Medical Association has reached such a size and—vastly more important—is confronted with such complex problems that it must call upon expert assistance in the fields of negotiations, bargaining and planning for the future. We need specialists who are capable of interpreting the business problems with which medicine is engaged and integrating them with the art and science of our profession.

It has been suggested that we should have a comprehensive survey of our future needs by business management experts. This, I believe, would be a waste of money and time. I know of no such experts in the particular field where we need help. It would be a great contribution if the American Medical Association would institute studies of this kind.

My own considered opinion is that we would derive the most help from a physician who understands our problems and can, at the same time, handle himself in the rough and tumble of negotiations and bargaining. Experience as a tackle or blocking half-back would be very advantageous.

We will need help of this kind immediately. This can be done on a part-time basis for the present, but a fulltime Medical Director will eventually be a necessity if we are to do battle on even terms with those who would try to make our profession subservient to outside pressures and dictates.

These are a few of the problems that confront you today. Some of them are minor procedures; some of them are major in consequence. I believe they warrant your earnest consideration. Some of them present a great challenge.

I would not have you think that I am pessimistic for the future. I, too, have read Gibbons' ponderous essay, but Rome fell, not alone because of the free bread and circuses, but because its people had no vision. They lacked that vital moral fiber and stamina which is still the warp and woof of American life.

As long as our youngsters can take a Model A Ford and by their mechanical genius make it travel 135 miles an hour; as long as our scientists can harness atoms and bring forth new and life-saving chemicals; as long as our colleagues can lead us still further into the scientific fields of medicine and roll back the clouds of ignorance with fresh and inspiring knowledge, I have no fears for the future.

Over the entrance of one of our state buildings in Sacramento is cut the inscription, "Bring me men to match my mountains." This could well be a motto for all of us. We have the mountains. We have the men. The challenge is before us. Let's get on with the job.

2010 Wilshire Boulevard, Los Angeles 57.

Symposium on Pain

Part II—Clinical Aspects

Introduction by

ROBERT B. AIRD, M.D., San Francisco

IN THE FIRST PORTION of this *Symposium on Pain*, the basic facts of pain mechanisms were reviewed in terms of what is known both neuroanatomically and neurophysiologically of pain mediating fibers and tracts. Because pain is not a simple sensation comparable to such other sensations as touch, temperature, sound and vision, the psychiatric aspects of the problem were also reviewed, since this is essential if the individual differences between perception and response are to be understood.

With this background, the second portion of the symposium was planned to cover certain clinical aspects of the problem. Since it obviously would be impossible to present the problems of pain as seen in all the various branches of medicine, three fields were selected to represent certain aspects of pain mechanisms as seen by clinicians.

The first paper on vascular pain is timely, in view of the increasing importance of geriatrics in modern medicine. Pain mechanisms associated with vascular disease are predominantly seen in arteriosclerotic patients and are common enough to make them of importance to general physicians and specialists alike. Dr. Edwin J. Wylie, Assistant Clinical Professor of Surgery, because of his specialization in vascular surgery and his particular interest in pain problems of vascular origin, was selected to present this aspect of the symposium.

Orthopedic surgeons are confronted with problems of pain in almost all parts of the body. Their province, of course, includes the bones and joints, but perhaps of even greater importance, also, the muscles which hold the bones and joints together. These structures and their investing deep tissues of mesenchymal origin are the most frequent sites of pain known in the body. Furthermore, the pain produced is sufficiently different in quality and distribution from the classical "dermatomal" pain of neurology as to have been very confusing, not only to orthopedic surgeons, but to all branches of medicine. Dr. Verne T. Inman, professor of orthopedic surgery at the University of California School of Medicine, has been one of the pioneers in the study and differentiation of pain of deep, mesenchymal origin. His report, therefore, represents a classical contribution.

Since pain, regardless of its cause or site of origin, is conveyed and perceived by the nervous system, the neurologist is consulted in many of the more difficult and confusing problems seen by the clinician. This fact, in addition to the presence of a famous visiting neurologist, explains why Professor Georg Schaltenbrand was assigned the third paper on the clinical portion of the symposium. Professor Schaltenbrand, director of the Neurological Clinic at the University of Wurzburg, is the leading neurologist of Germany and is here as visiting professor of neurology at the University of California School of Medicine. Professor Schaltenbrand was not only a student of Nonne at Hamburg in Germany, but also studied with Harvey Cushing and Percival Bailey in this country. In fact, he is at present writing an *Atlas of the Brain* in conjunction with Percival Bailey. Professor Schaltenbrand's discussion of pain, which presents some of his own observations on pain mechanisms, represents another original contribution on this difficult and interesting subject.

Sponsored by the Department of Neurology and the Biomechanics Group of the Department of Orthopedic Surgery, University of California School of Medicine, and Medical Extension, San Francisco 22.

Dr. Aird is professor and chairman, Department of Neurology, University of California School of Medicine, San Francisco 22.

Pain in Vascular Disease

EDWIN J. WYLIE, M.D., San Francisco

PAIN IN VASCULAR DISEASE, although frequently ill-defined, is usually the presenting complaint. Realization of the significance of the varying types of pain encountered will often be the most important guide in determining therapy and prognosis. It must be acknowledged, however, that pain in vascular disorders is only one of the clinical facets. It is the pur-

Dr. Wylie is assistant clinical professor of surgery, Department of Surgery, University of California School of Medicine, San Francisco 22.

pose of this presentation to emphasize the pain syndromes commonly encountered in vascular disease, to relate them in a general fashion to pathological change, and to indicate the ways in which the patient's reaction to, or description of, pain may aid in diagnosis and management.

Unlike pain arising from other systemic disease or injury, pain in vascular disease rarely relates to the vascular components. A major artery or vein, surgically exposed after only skin anesthesia, may be incised or crushed painlessly. Pain is produced, however, by interference with normal blood flow through veins or arteries, occasionally by reflex mechanisms secondary to such interference, and by secondary inflammation in contiguous structures. The nature of the pain depends upon the vessels involved and the rate of circulatory change.

ARTERIAL OCCLUSION

The primary symptom of arterial occlusion is pain arising from resultant ischemia of tissues normally supplied by the involved artery. Sudden occlusion of a major artery produces a succession of varying types of pain. In the initial phase excruciating, deep-seated and burning pain involves the entire limb distal to the level of occlusion. This pain rarely persists longer than an hour and is believed to be due to generalized ischemia, secondary to diffuse reflex vasoconstriction involving the whole limb. It is replaced by a dull, deep aching some distance distal to the level of arterial occlusion. At this stage varying degrees of sensory loss develop in the distal-most portion of the limb, the intensity depending upon the degree of collateral flow. Within a few hours after the onset of uncompensated arterial occlusion, edema of the ischemic tissue develops. Swelling of muscle bundles enclosed in fascial compartments causes increasingly severe pain localized to these muscular zones. Hence, a few hours after embolic occlusion of a femoral artery, for example, it is common to find anesthesia or hypesthesia of the foot, agonizing pain and tenderness in the calf with tense swelling of the lower leg.

Immediate relief of pain in any of these situations usually requires surgical restoration of blood flow. Vasodilating drugs or sympathetic blocks are of virtually no value in relieving vasoconstriction or in diminishing pain. Intravenously administered heparin to reduce the distal propagation of thrombosis is advisable as soon after the onset of occlusion as possible. In addition the limb should be protected from pressure, maintained in a slightly dependent position, and warmed by external heat to within a few degrees (82° to 85° F.) of normal body temperature. Surgical intervention, if technically feasible, should be undertaken within the first 12 hours after acute obstruction has developed.

Gradual arterial occlusion produces less dramatic symptoms due to the concurrent expansion of collateral arterial channels. The slow narrowing and eventual occlusion of the major arteries by arteriosclerosis cause most of the syndromes in this category. By means of arteriography, the use of which has become widespread, the sites and extent of occlusion may be correlated with the resulting ischemic pain syndromes.

The pain of claudication, the classical symptom of chronic arterial occlusion, is a manifestation of the least degree of ischemia. It appears in muscles functioning with inadequate arterial supply, the location depending upon the group of muscles in the ischemic area most active in performing specific motions. Obstruction of the popliteal or superficial femoral arteries causes calf claudication. External iliac or common femoral artery obstruction also causes calf claudication accompanied by fatigue and discomfort in the posterior thigh musculature, the area supplied by the now obstructed profunda femoris. Thigh claudication rarely is accompanied by the severe deep cramp or ache of calf claudication; more commonly it is manifest only as fatigue. It may appear as the initial symptom or as an upward extension of calf pain. Occlusion of the common iliac artery, which reduces flow through the hypogastric vessels, causes gluteal fatigue on walking, and occasionally a deep, boring pain in the hip. Hypogastric artery occlusion has been encountered as a solitary lesion. Subsequent hip pain on walking, unaccompanied by arterial insufficiency in the corresponding extremity, presents an unusual diagnostic problem.

Occasionally a problem in diagnosis is presented by claudication produced by a stenotic lesion which, because of the still patent arterial lumen, does not completely obliterate the distal pulses. Recognition of the site of obstructive arterial lesions is of more than academic interest. Recent advances in arterial surgery have made the lesions producing claudication amenable to direct surgical operation for the purpose of restoring normal blood flow.

As ischemia increases due to the formation of multiple obstructive lesions and progressive diminution of collateral supply, constant pain appears in the distal-most portion of the extremity. This so-called "rest pain" is deep, burning and unremitting, and in time may cause complete emotional disintegration. It is commonly associated with decreased temperature and color signs of chronic ischemia. The patient may get partial but only temporary relief by dangling the extremity. Arteriography at this stage usually shows multiple occlusions of the arte-

rial tree or single occlusion at important collateral junctions—that is, the common femoral artery or the popliteal artery at its bifurcation.

The results of therapy for ischemia of rest pain have for the most part been disappointing. Only rarely are the obstructive lesions amenable to direct surgical operation. Sympathectomy may give some relief, but it is generally transient. Amputation is commonly the final resort for relief of pain.

Tissue necrosis or gangrene, the ultimate manifestation of ischemia, is rarely painful. An exception is the uncommon ischemic ulcer that appears on the lateral surface of the heel, ankle or lower leg. This lesion is not only painful but acutely tender. Frequently sympathectomy, although of little or no value in peripheral gangrene, gives dramatic relief followed by healing of the ischemic ulceration of the leg.

The foregoing comments apply primarily to the lesions of arteriosclerosis which account for the majority of pain syndromes associated with arterial insufficiency. There is a smaller group of miscellaneous arteritides that present a variety of perplexing pain syndromes. They are unique in their involvement of the smaller arteries or arterioles, and in the strong element of peripheral vasospasms associated with a primary organic lesion. The pain produced by occlusion of an important small artery, as, for example, a digital artery, often seems out of proportion to the area of ischemic tissue. Acute local tenderness follows skin ulceration, which generally occurs at the end of the involved digit. The most frequently encountered arteritis in this group is the least understood. It occurs primarily in women from the ages of 20 to 45 and is manifested originally by chronic cyanosis of the fingertips, punctuated by intermittent Raynaud's attacks. Stiffening at the finger joints and sclerodermatous skin changes are common. Tenderness and pain develop at the finger tips and ulceration follows. Obliteration of small arteries may be seen by clinical examination or by arteriography. The other arteritis commonly encountered in this group is Buerger's disease. It occurs in the same age group and is confined almost entirely to males. Manifestations of pain in this disease occur with small artery occlusion and are ordinarily confined to the digits. Necrosis, when it occurs, is painful, and larger areas of the digit are involved than in the sclerodermatous syndrome already described. Pain in both diseases may be dramatically relieved after removing the vasoconstrictive element of ischemia by sympathectomy.

Abnormal vasoconstriction in the absence of organic arterial disease, a syndrome manifested by chronic cyanosis of the extremities, rarely causes sufficient interference of blood flow to produce severe pain. Chronic low-grade aching discomfort, unusual coldness, and occasional numbness may appear. All these symptoms are accentuated by exposure to cold. Vasodilating drugs are of little or no value. In extreme discomfort sympathectomy is indicated.

ANEURYSMS

Simple aneurysmal dilatation of an artery in the absence of erosion or pressure upon adjacent structures rarely causes more than an uncomfortable throbbing sensation. Pain, when it does appear, is of serious significance. A break in the inner lining of the diseased vessel, followed by sudden dissection of blood in the arterial wall and rapid dilatation of the artery, causes severe but temporary local pain. If the lumen should become partially obliterated in the process, the pain of ischemia occurs in the involved extremity. Similar local pain follows rupture of the aneurysm. This also may be transient, inasmuch as bleeding generally is temporarily arrested by clotting in perivascular tissue. Subsequent break-through of the flimsy barrier in the case of abdominal and thoracic aneurysms leads to sudden death from exsanguination. The time lag between the initial pain and the ultimate break-through may vary from a few hours to several days. Hence, it is apparent that sudden or severe pain from a known aneurysm is an urgent indication for surgical intervention.

The mortality rate for resection and grafting of aneurysms of the abdominal aorta increases from 10 to 50 per cent once rupture occurs. In view of the high incidence of eventual rupture, in most instances verification of the existence of an aortic aneurysm is an indication for operation even in the absence of pain.

THROMBOPHLEBITIS

Pain states in peripheral venous disorders are largely those of either inflammation or venous stasis. It is recognized that the manifestations of thrombophlebitis may vary from minor discomfort to one of the most agonizing forms of pain. A brief description of the clinical variations follows. These should be recognized, however, as differences in degree, rather than separate diseases. The therapeutic implications, save for measures to relieve pain, are essentially the same.

The least painful form of thrombophlebitis, which also carries the highest mortality and is often termed phlebothrombosis, is the noninflammatory blood clot in the deep veins of the lower leg. Slight local tenderness of the calf may be the only sign. Progressive perivascular inflammation increases the de-

gree of local pain and tenderness. Ascent of the process extends the area of pain. Variable degrees of sympathetic overactivity may augment and diffuse the pain. These basic mechanisms may develop in a dramatic and extreme form to produce the symptoms of phlegmasia cerulae dolens, a suddenly developing, galloping phlebitis involving more or less simultaneously the entire venous tree of an extremity. The coincident arterial as well as venous vasoconstriction contributes to the development of swelling, tension, cyanosis and inordinate pain in the extremity. Opiates only partially relieve the pain. Sympathetic blocks and local heat do little more. Occasionally, massive irreversible gangrene develops.

Therapy for any of the variations of deep thrombophlebitis is dictated by its manifestations. Anticoagulants, unless contraindicated, are of value in arresting the spread of intravascular thrombosis. In the relatively painless form, little more is needed. These drugs should be continued until local tenderness has completely subsided. As with any other inflammatory processes, elevation, rest and local heat reduce the pain of the more inflammatory forms. Sympathetic blocks or sympathectomy, even in the presence of vasoconstriction, have been generally ineffective in the treatment of deep thrombophlebitis.

CHRONIC VENOUS STASIS

The pain of chronic venous stasis appears with varicose veins and as a residual effect of deep thrombophlebitis.

In both syndromes valvular incompetence interferes with the normal mechanism for returning venous blood from the lower extremities. Increased dependent venous pressure results, producing chronic aching fatigue in the lower legs after prolonged dependency.

Walking tends to decrease venous pressure and accordingly eases the discomfort. Elastic support to the level of the knees, if adequate to prevent edema, usually gives satisfactory relief. This requires the use of heavy, tight elastic stockings worn during the hours when the patient is erect. Painful night cramps in the calf and thigh muscles are frequent complaints of patients with either varicose veins or chronic phlebitis. The cause is obscure.

Surgical resection of varicose veins by removing the valveless portion of the venous system is the preferred alternative to elastic compression for patients with primary varicosities. Various surgical procedures have been attempted for the treatment of postphlebitic syndrome—that is, popliteal or superficial femoral vein ligation. The early enthusiasm for such procedures, however, has largely disappeared.

Pain as Observed by the Orthopedic Surgeon

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THE MAJORITY OF PATIENTS with painful conditions who are observed by an orthopedic surgeon describe their pain as deep and aching. Occasionally they will report that it has a burning, throbbing or pulling quality. Usually it is poorly localized. This may be explained, in part, by its tendency to spread. In the case of a shoulder lesion, for example, the patient will say that the ache tends to spread down his arm or into his neck.

Particularly troublesome in this respect, of course, is backache, with its familiar radiation of pain across the buttocks and down the posterior aspect of the thigh. Medical literature indicates that backache has been with us for a long time. In the period from about 1890 to 1910, this was known as sciatic scoliosis. When I was in school, the sacroiliac joint was incriminated, and, in the following decade, the herniated intervertebral disc was enthusiastically espoused as the chief cause of back pain with radiation into the extremities. We are perhaps now over the peak of this latter enthusiasm.

Several dissenting voices, however, have been raised from time to time. Arthur Steindler, for example, with reference to the disc concept, pointed out that pain which radiates from the low back tends to be continuous from this area, appearing in the buttocks, then gradually creeping down the posterior aspect of the leg. Isn't it odd, he said, if pressure on the fifth lumbar root is producing discomfort, that the pain should appear in the back and involve the area of the third sacral nerve, go down to the second and then to the first sacral and finally to the fifth lumbar nerve. Why should the pain not appear first in the foot, which is the area of the fifth dermatome?

Physicians and surgeons have always been interested in the distribution of pain as an aid to diagnosis, and since the earliest times investigators have attempted to find a rational basis for the distribution of pain associated with a particular disease or disorder. To understand better the peripheral patterns of distribution of the dorsal roots (segmental patterns), maps of dermatomes have been constructed to represent the cutaneous areas supplied by these nerve roots. Similarly, there have been attempts to plot maps of myotomes and sclerotomes, showing the distribution of the dorsal afferent nerve fibers to muscle and bone.

The person who consults these maps is likely to

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find them more confusing than helpful unless he takes into consideration the methods that were used in constructing them. Perhaps best known among the maps of dermatomes are those of Sherrington,[8] Bolk,[1] Head and Campbell,[4] and Foerster[3] and, more recently, Keegan and Garrett.[6] Sherrington, the earliest of these investigators, cut the dorsal roots above and below a given root in monkeys *(Macacus rhesus)* and mapped the response to skin pinching in the area of residual sensation. Although the spine and nerve roots of *Macacus* are very similar to those of man, there is in the lower extremities some question of analogous nerve roots and analogous areas of conformation. These maps, therefore, are a measure of minimal reflex response to a pinch in an animal of subhuman nervous development.

Bolk derived his descriptions of the dermatomes from the gross anatomical dissection of one human body. As one would expect, the areas derived by this method are smaller and show less overlap than the areas obtained by other methods, owing to the difficulty of dissecting out the finer nerves to the skin.

Head based his maps largely upon the distributions of lesions of herpes zoster. It has been conjectured that these lesions result from antidromic stimulation of fibers in the dorsal roots, and the areas thus outlined do not seem to reflect the complete areas of segmental innervation.

Foerster, whose descriptions of dermatomes are perhaps the most widely accepted, cut the dorsal roots in human subjects and then plotted the remaining sensory field. The data of his maps were presumably derived by neurological testing, which usually involves a sensory judgment and verbal response on the part of the patient. Foerster found less overlap in the segmental areas for pain than in those for touch.

Despite the disparities among these earlier maps, several general conclusions can be drawn from them. Clearly, there is a considerable overlap of contiguous skin segments. Also, it is generally agreed that the interruption of a single posterior root does not give rise to an area of anesthesia. Thus, if the boundaries of a segment are determined by cutting several dorsal roots and charting the areas of remaining sensibility—the method of "isolation"—the segmental areas that result are considerably greater than those obtained by cutting single roots and trying to map the area of slightly altered sensibility that will result. Dermatomes plotted on the basis of tactual stimulation show more overlap than those plotted in response to noxious stimulation.

In the 1930's, the observation that a herniated intervertebral disc gave rise to pain of segmental distribution appeared to offer a new method of mapping the peripheral distribution of the dorsal root nerves in human subjects. The further observation that areas of skin are hypoalgetic in subjects with disc pain led Keegan to draw up a new map of the dermatomes on the basis of these areas. Keegan's maps varied distinctly from the earlier maps of the dermatomes in that in his the dermatomes extended as continuous bands from the spine into the limb. This conception of the dermatomes contradicts the commonly accepted theory of the loop development of the dermatomes of the limb, in which the outermost segments have lost their relation to the trunk. The earlier charts of Sherrington and Foerster were based on sensory mapping, following the resection of spinal roots, whereas Keegan's maps reflect decreased sensitivity in skin areas associated with an abnormal condition of the spinal root, and the presence of severe pain in the deep tissues.

The presence of areas of hypoalgetic skin in association with pain in the deep tissues is not an unusual observation. In the author's studies on the distribution of pain in the deeper tissues, a decreased sensitivity of the skin in concentric areas about the site of deep pain was demonstrated. The significance of these areas of hypoalgesia is still largely a matter for speculation.

The disparity between the distribution of pain accompanying a herniated intervertebral disc and the distribution of pain to be expected from classic dermatome mapping is perhaps not too surprising for at least two reasons: (1) As just discussed, the distribution in the case of the disc is complicated by an underlying condition of severe pain, whereas no such pain was a condition in the determination of the classic dermatome. (2) Furthermore, the pain in the case of the disc is localized in the deeper tissues, and there is reason to believe that the deeper segments are extended into the extremities quite differently than are the skin segments.

In 1940 at the University of California we became interested in the irritation of the deeper tissues and their innervation. A little earlier, Kellgren,[7] working in the laboratory of Sir Thomas Lewis, had stimulated the deeper tissues by means of salt solution and had shown that the resulting pain did not remain localized in the area of the injection but tended to radiate. In 1944, a colleague and I published some work[5] on the sensitivity of connective tissues, using salt solution and pressures. We found that from all the connective tissues of the body so tested pain could be evoked. The most surprising thing, however, was that when we produced a painful experimental lesion, the pain did not remain localized but tended to spread. Occasionally, this aching pain which was initiated by a very small irritative lesion spread for a considerable distance. Later, in the same laboratory Feinstein[2] and coworkers attempted to chart experimentally the seg-

mental pattern of deep spreading pain. Paravertebral injections of 6 per cent saline solution were made in human subjects at each intervertebral level from the occiput to the sacrum. The distribution of pain resulting from these injections was found to approximate a segmental plan. When compared with the conventional dermatomes, however, the patterns of distribution of the diffuse pain in the deep tissues was found to overlap considerably more with adjacent segments. The chief disparities in this regard were found in the segments extending into the extremities, since, in most instances, the pain radiated from the site of the injection and each segment maintained a relation with the trunk. Embryologically, in the development of the limb buds, the skin segments that are drawn most distally lose their relation with the trunk, with the formation of dorsal and ventral axial lines; whereas, the deeper tissues that are innervated by the corresponding spinal nerves would appear to be drawn out in continuous bands from the trunk.

The important point to be made from all this is that the configurations of the dermatomes cannot be taken to represent accurately the segmental relations of the underlying muscle and bone. It is apparent that we still have much to learn concerning the segmental innervation of the deep tissues before we can properly understand the patterns of pain to be observed experimentally or in pathological conditions.

What, then, can be said at the present time by an orthopedist concerning the pain of the deep tissues? I think that present experimental and clinical findings afford the following useful generalizations: Pain can be elicited from the deep structures of the body, particularly the connective tissue structures. The stimulus required may not be severe or extensive. Pain so aroused always tends to radiate either proximally or distally from the point of stimulation. The pain is characteristically deep, aching, heavy in type, and is often described as having a three-dimensional character. It is not referred to the surface of the body but is reported as remaining within the deep tissues. If the radiation of pain is intense, the skin overlying the area of pain may become slightly hypoalgesic. The deep tissues within the area of maximal radiation may become tender to pressure. Neurological findings indicative of nerve compression, such as muscular weakness, reflex changes or alterations in proprioception, may complicate the picture but are not an essential part of this deep pain.

Finally, it should be emphasized that the presence of pain which tends to radiate does not necessarily indicate direct irritation or compression of a peripheral nerve or of a spinal nerve root. The characteristic, radiating pain that I have discussed is to be expected in any irritative lesion involving the deeper tissues. Failure to appreciate this phenomenon is likely to lead one astray in the diagnosis of painful lesions of deep origin. This is particularly true in cases diagnosed as sciatica. In the present enthusiasm for herniated intervertebral discs, it may be overlooked that irritation of the deeper tissues will produce radiating pain without direct involvement of a spinal root.

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Neuralgia and Other Pain As Observed by the Neurologist

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PAIN HAS SPECIAL PECULIARITIES and it is distinguished from other sensations, like those of position, touch, and even temperature, by its emotional character which it shares only with the sensation of sexual excitement. As a matter of fact, these two sensations have so much in common that they sometimes may change from one to the other.

Another peculiarity which these two types of sensation have in common is their dependence upon physiological summation. Achelis[1] showed that a single stimulus to a pain fiber almost never will produce the sensation of pain, but that repeated stimuli are necessary. It is interesting that summation can be produced both by repeated stimulation of the same point or by spatial summation, as for in-

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stance, by repeated stimulation caused by a needle moving slowly over the skin.[2] In this latter instance there is a change of excitability, which gradually increases until finally the warning signal of pain is dispatched. This peculiarity explains why, for instance, cutting a muscle or cutting the spleen or liver, or even scratching or cutting the bowels, will not cause pain, although we all know that these organs may be associated with considerable amounts of pain in inflammatory diseases or in anoxic states. An enormous amount of summation is found in causalgia, as was first described in this country by Weir Mitchell. In their studies on pain, both Sir Thomas Lewis and Harold G. Wolff and his school have taught us that there must be certain efferent conditions, the effects of which would be to produce a hyperexcitability in the periphery around the point stimulated. It would appear that there is a physiological "feed-back" mechanism involved in pain sensation and that there might be a nervous regulation controlling this "feed-back," a regulation which is easily disturbed in disease. The best evidence for such centrifugal effects in painful conditions is found in zoster eruptions associated with inflammation. It is also found after mechanical traumatization of the intervertebral ganglion. Operations on the sympathetic nervous system in causalgia have taught us the enormous importance of this system for the control of what I have called "feed-back." We know that after sympathectomy, patients with causalgia will still have pain, even though the peculiar character of causalgia has disappeared.

Let us now turn to the central nervous system. When the thalamic tract is interrupted on one side only, the pain sensation will return after some time. As mentioned before, it is evident that the mediation of pain is diffuse and it is able to flow around such an interruption. Clinical experience seems to indicate that in the central nervous system an increased excitatory state of the tracts conducting pain may be caused by disorders of neighboring systems. It seems that the blocking of impulses, which normally travel along the epicritic system, will readily cause pain. This is seen in tabetic persons, in whom the destruction of the posterior tract may be accompanied by very severe attacks of pain. We see this also in the thalamic syndrome, an example of which I would like to present to you.

The patient was a woman who had suffered for many years from extreme pain involving all of one side of her body. A diminution of sensation was found in this same side. She also had a trigger zone, the right lower forearm, hand and axilla, which would respond to touch with the production of overwhelming attacks of one-sided pain. She had a similar trigger zone posteriorly.

I had a chance to study the brain of this woman in a series of neuropathological sections. One of the smallest lesions described in the literature (the case was reported by Hoffmann[3]) was found in the lateral ventral portion of the thalamus. It is of interest in this connection that with lesions of the more anterior part of the thalamus, pain sensation remains after leukotomy. The patient is able to say that he has pain and to say where. Nevertheless, after leukotomy, he does not *suffer* from the pain any more. Evidently, the uninterrupted fronto-thalamic tracts give rise to the strong emotional reaction which is the most disagreeable part of pain.

Next, I would like to discuss certain special clinical conditions associated with pain. The first condition I want to talk about is pain as found in patients with diminished intracranial tension. This syndrome is not yet sufficiently well known. I first ran across this type of pain when trying to improve the technique of pneumoencephalography by altering the external atmospheric pressure around the patient.[9] It was noted that the patient would feel no pain at a certain external atmospheric pressure, but would again feel pain if the pressure was diminshed or increased. The pain could be related to the changes of pressure in the intracranial cavity, this being relatively low when the atmospheric pressure was increased and high when the atmospheric pressure was diminished. Patients with hydrocephalus were particularly sensitive and immediately complained of pain when the external pressure was raised too much, thus diminishing the relative pressure of the air in the cranial cavities.

This observation led to the question whether conditions of diminished intracranial pressure do not exist under other circumstances. Certainly one such condition that is very frequently brought about is the one produced by a physician when he performs a lumbar puncture. Often the patients complain of headache after the puncture and this has been termed "meningismus." The same condition may also develop spontaneously.[10,11] I have seen this in half a dozen young women, without any relation to menstruation, pregnancy or to any other known factor. I have never seen this condition develop spontaneously in men. In the affected women, very strong headaches developed suddenly and were associated with retraction of the head, a buzzing tinnitus, vomiting and slowing of the pulse. The condition resembled very much that seen with increased intracranial pressure. However, the optic discs were not swollen and on lumbar puncture a sucking noise caused by aspiration of air was heard. Only by attaching a manometer, already filled with saline solution, were we able to measure the pressure in the subarachnoid space, and this showed the pressure to be very low—usually a negative pressure below zero. The condition of the women could be

improved immediately by the injection of warm Ringer's solution into the subarachnoid space. This usually helped for a day or two, when the condition tended to recur. However, after a period of two or three weeks these patients usually felt all right again and then the cerebral spinal fluid pressure also was normal. A concomitant of the diminution of cerebral spinal fluid pressure was an increase in the protein content of the cerebrospinal fluid. Furthermore, when the cerebrospinal fluid pressure rose to normal again, the protein content returned to normal.

I do not know what the pathologic changes associated with this condition are. Autopsy has not been done. The patients recover spontaneously—perhaps aided by the influence of repeated injections of Ringer's solution. I suspect, however, that the choroid plexus stops secreting cerebrospinal fluid, much as the kidney stops secreting urine in anuria when there is an acute glomerular nephritis.

Vincent[4,6,7,8] and co-workers in France have found similar conditions after brain operations and cerebral trauma. Especially in hydrocephalic children, compensated by some atrophy of the plexus, such a condition of hypotension is likely to develop when the obstruction causing hydrocephalus is removed. I am convinced hypotension is also responsible for some of the headaches of older people, particularly when associated with arteriosclerosis, and that it is a frequent cause of not only hemorrhages of the brain, but also of hemorrhages into the dura mater.[13]

Another condition in which I have been interested is trigeminal neuralgia. As you know, there are many theories about this disease, among them the one advocated by Lewey that trigeminal neuralgia is a kind of thalamic syndrome.[5] Trigeminal neuralgia is usually found in patients with arterial hypertension, which raises the possibility of encephalomalacic softening of the thalamus as a cause of this painful condition. It is very difficult to obtain good autopsy material from the trigeminal nerve and from the gasserian ganglion in patients with trigeminal neuralgia because most of these patients have already been operated on or have had repeated injections. We were able to collect such material from an old woman who had been suffering from trigeminal neuralgia and hypertension for some years.[12] She had a medullary tractotomy by the Sjoquist technique, but died a few days after the operation from a hemorrhage in the operative field. The gasserian ganglion in this patient had never been touched before. In this patient we removed the entire sphenoid bone *en bloc* with the pituitary fossa and the gasserian ganglions. We decalcified this specimen, embedded it in celloidin and cut it in serial sections. Advanced arteriosclerotic changes were observed in the carotid and the finer vessels supplying the ganglia gasseri. Arteriosclerotic changes were noted also in the capillaries and concrements which developed out of them and out of the disintegrating ganglion cells of the ganglia gasseri. The brain stem, the brain and the thalamus also were sectioned. Although there were some arteriosclerotic lesions outside the thalamus, none were found in the thalamus itself.

It is true that we found arteriosclerotic changes in both gasserian ganglions, which makes it difficult to explain why the patient had neuralgia on only one side. Nevertheless, I feel that the trigeminal neuralgia in this patient—and I suppose also in many others—is caused by the obliteration of vessels due to arteriosclerosis, and I consider the trigeminal neuralgia as a kind of *claudicatio intermittens* of the ganglion. I have been informed that Penfield has a similar conception. He speaks of an epilepsy of the gasserian ganglion. The importance of this theory lies in the therapeutic possibilities it raises—the possibility of treating trigeminal neuralgia by drugs which improve the circulation of the ganglion, or by drugs which increase the amount of hemoglobin in the blood, or simply by oxygen therapy, which in my experience sometimes helps quite well, or finally by drugs which decrease the metabolism of the ganglion cells. This latter may be the reason for the action of Dilantin, which in many patients with trigeminal neuralgia gives definite relief, given in doses of from 1 to 3 grams daily. This theory also explains the fact that trigeminal neuralgia can be treated successfully by simply opening the cavum mecklii, a procedure which improves the vascularization and blood supply of the ganglion.

Let us now turn to another type of neuralgia which we all have to treat frequently, namely sciatic pain. During the first fifteen years of my medical career, sciatic pain was considered to be caused by some inflammatory condition of the spinal roots or of the nerve itself. In the past fifteen years the intervertebral disc has been the scapegoat. Now, if we blame the disc alone, it is difficult to explain why patients are helped by antirheumatic treatment. If it is the nerve alone, it is hard to explain why removal of the disc will help so many patients. Again, if it is the disc alone it is hard to explain why patients with sciatic neuralgia come into the hospital when the weather gets cold. I have very striking examples of this. I studied the statistics of hospital admissions for patients with neuralgias and neuritis in Hamburg while I was working there as an assistant of Professor Nonne. I found that there was a definite correlation between the number of such admissions and cold weather. When I moved to Wurzburg, I studied the records of this hospital and found that the same situation was true for Wurzburg.[14] The number of admissions of neuralgia during a term of fifteen years in Wurzburg closely paralleled the

admissions in Hamburg. When these two admission curves were compared with the lowest temperatures of the years, an inverse relationship was found. The colder the year, the greater the number of patients with neuralgia admitted; and this was true for the different periods of the year.

Thus, with all due respect to the intravertebral disc, we have all seen cases in which the protrusion of a disc caused *locus minoris resistentiae*, but did not necessarily cause neuralgia. In most patients additional factors must also be taken into account in explanation of the development of neuralgia, such as the influence of temperature and the influence of so-called "focal infections." Evidently the water balance of the connective tissues and the irritability of the whole nervous system are two important factors that must be taken into consideration in neuralgia. This explains the rationale for several consecutive types of treatment. Several methods, like sweating and salicylic acids, remove excessive fluids from the tissues and thereby diminish the pressure on the nerve. They also improve the transport of oxygen to the capillaries and thus relieve the nerve that is suffering from suffocation. To some extent the same effect is achieved by corticotropin (ACTH) and cortisone, which are of importance in all the painful conditions of rheumatic origin. In polyarthritis we can see with our eyes and feel with our hands how the painful swelling of tissues diminishes under the magic effect of these products of internal secretion.

Besides these well known measures that influence pain, I want to draw your attention to another one which is not so well known but nevertheless sometimes is very effective, namely insulin. During the last war it was found that insulin controlled the terrific pain of causalgia. At the same time, the increased blood pressure, which is almost always an accompaniment of causalgia, is reduced. In my experience—and this is corroborated by reports in the literature—insulin likewise influences the pain of trigeminal neuralgia. I have seen some very remarkable effects of insulin also in tabetic pains. I do not know how insulin works in these cases. Perhaps it works by diminishing the concentration of sugar and thus by starving the cells. Starvation, indeed, is known to diminish pain. In this sense, it may be that pain is in part the result of a certain luxury of the body.

Finally, I want to make a few remarks about the psychic side of pain. We must not forget that in patients suffering from pain their mental reaction is one of the most important factors. Saints and fakirs have been able to suffer serious wounds without complaining about pain. On the other hand, we see people complaining about terrific pain and undergoing operation after operation, as for instance, veterans whose limbs have been amputated. My experience has taught me that it is rather useless to continue with one operation after another in amputees. What these patients need is re-education. The loss of a leg or arm is not only an anatomical mutilation, it is also a demoralizing mutilation of the body's scheme, which many patients cannot stand. I have seen a few patients who, having been morphine addicts for many years, wandering from physician to physician, and undergoing one operation after another, suddenly achieve a mental revolution which allows them to throw away the morphine syringe and start a new life in which they forget their amputation.

As physicians we must try to educate patients to a proper mental attitude, teaching them how the sensation of pain depends on their attention and emotional interest. We must teach them that there are other interests in life besides the introspective and limiting one of the intact body scheme.

This concludes Part II of a symposium in three parts. Part I appeared in May. Part III will appear in a later issue.

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Allergic Implications of Blood Disorders in Infancy and Childhood

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• **The clinical manifestations of many of the blood disorders are wholly or partially dependent on immunoallergic reactions. A growing body of evidence permits the characterization of antigen-antibody mechanisms in connection with hemolytic anemia, purpura and agranulocytosis, and more specifically for each of the blood cell elements and for the vessel wall.**

These reactions extend to maternal-fetal relationships producing well defined blood disorders manifest at birth or in the neonatal period.

Once the effects of the hypersensitive state are set in motion during the course of a blood disorder, therapeutic measures to slow their progress are often futile. Because it is not always possible to identify the potentially allergic child in whom these circumstances will occur, it is extremely important to weigh the advantages of the use of a drug before it is administered especially when its side effects have not yet been thoroughly investigated.

Important information has recently been obtained regarding the heightened susceptibility to infection in children with chronic anemia who have had splenectomy to reduce the frequency of transfusions. The hypersensitive responses in children with spleen removed may result in overwhelming and often fulminating infections necessitating rigid criteria in selecting patients of the pediatric age for this operation.

THE ROLE OF HYPERSENSITIVITY in the pathogenesis of blood disorders depends upon the latitude given to this concept. Historically, allergy implies an altered capacity of the body to react to a foreign substance after repeated contacts with it. It denotes an intense and occasionally explosive reaction following the introduction of a substance innocuous in normal persons.

The type of response resulting from the combination of an antigen with an antibody has its counterpart in the immunoallergic mechanisms underlying many of the blood disorders. Many of these are now classified in that section of hematology designated as immunohematology and include hemolytic anemia, granulocytopenia and thrombocytopenia based on antibodies to the respective formed blood elements, blood vessel hypersensitivity, blood disorders resulting from incompatibility between blood elements of fetus and mother, transfusion reactions, and sensitivity induced by bacterial, chemical and physical agents.

In many instances a recognizable antigen-antibody mechanism can be determined; in others a hypersensitive state is inferred from the clinical features while still awaiting precise immunological identification. Frequently the manifestations of the blood disorder occur solely as a consequence of an antigen-antibody reaction. In other cases the disorder is a manifestation of an underlying disease. Thus autoimmune acquired hemolytic anemia in which the antibody is capable of reacting with the subject's own red cells to cause accelerated blood destruction may exist as a disease *sui generis* or occur in association with leukemia, disseminated lupus erythematosus, lymphosarcoma and other neoplastic diseases.

In this connection it is pertinent to dilate on the extraordinary phenomenon by which antibodies are elaborated which are capable of reacting with the patient's own red cells. A similar situation pertains in those cases of thrombocytopenic purpura and agranulocytosis in which antibodies are directed against the patient's platelets and polymorphonuclear cells. These disorders call attention to the remarkable tolerance developed from early fetal life by which the body in health avoids forming antibodies against its own tissues.[1] Such dire circumstances in which a living organism becomes capable of producing antibodies against its own body constituents, Ehrlich[2] termed "horror autotoxicus." The fundamental feature of autoimmune acquired hemolytic anemia and of other disorders characterized by autoimmune antibodies to blood cell elements is the loss of this normally acquired tolerance with the development of antibodies to one's own cellular antigens.

Although the blood disorders to be discussed in this paper represent a small segment of those encountered in pediatric practice, they illustrate the varied expressions of clinical disease when an allergic component is either partially or wholly responsible for their pathogenesis. Emphasis upon allergy

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TABLE 1.—*Causes of Eosinophilia in Infancy and Childhood*

Allergic disorders: Bronchial asthma, hay fever, urticaria.
Skin diseases: Eczema, psoriasis, scabies and erythema neonatorum.
Parasitic infections: Trichinosis, Ascaris, echinococcus disease and visceral larva migrans.
Pulmonary eosinophilia: Eosinophilic pneumonitis (Loeffler's syndrome), prolonged pulmonary eosinophilia, tropical eosinophilia, pulmonary eosinophilia with asthma.
Blood disorders: Eosinophilic leukemia, Hodgkin's disease, following splenectomy, recovery phase of acute infectious lymphocytosis.
Irradiation.
Familial eosinophilia.
Miscellaneous infections and disorders: Scarlet fever, chorea; drugs and chemicals; benzol poisoning, camphor, phosphorus etc., periarteritis nodosa and metastatic neoplasms.

in no way indicates that this aspect represents the sole feature in every disorder in the arbitrarily selected group.

Eosinophilia

From the time when it was first demonstrated that foreign materials such as parasitic extracts were chemotactic for eosinophils, the relationship of these cells to diseases of sensitization has been amply confirmed. The number and proportion of eosinophils are greatly increased in patients with various types of allergic sensitivity, with parasitic infection, especially by nematodes, and following anaphylactic reactions. The eosinophil is the only cell which is known to respond specifically during states of hypersensitivity to become attached to shock tissues.[3] Since eosinophilic granulocytes appear in large numbers in conditions in which antigen-antibody reactions occur, the entities in which they are prominent may be reviewed. Accordingly those conditions are listed which are characterized by eosinophilia (Table 1). This will be taken to mean an increase of those cells above 5 per cent or 500 per cu. mm.

The recent case of a boy 9 years of age with leukocytes numbering 88,000 per cu. mm. of blood (80 per cent eosinophils) in association with diffuse parenchymal infiltration of both lungs, a hacking cough, eosinophil-laden sputum and intermittent fever, prompted a review of the causes of eosinophilia. In this patient the continous contact with a cat suggested a diagnosis of infection with *toxocara cata*.[4,5] In the absence of liver biopsy to demonstrate larvae a diagnosis of this condition could still be considered from the presence of the persistent and pronounced eosinophilia, pulmonary infiltration and moderate hepatomegaly.

An alternate diagnosis was one of the syndromes in which pulmonary involvement is accompanied by eosinophilia such as Loeffler's syndrome and prolonged pulmonary eosinophilia described by Crofton.[6] Of the two, prolonged pulmonary eosinophilia seemed the more likely by virtue of the persistence and extent of abnormal radiographic shadows and by the more intense degree of eosinophilia. In this case steroids (prednisone) produced a regression of the lung infiltration with symptomatic relief, and a reduction of leukocytes to 6,000 per cu. mm., 9 per cent eosinophils. However, the remission was short and the child eventually died of eosinophilic leukemia. The cells maintained their maturity until the last weeks of the course, at which time eosinophilic myelocytes appeared in the peripheral blood and bone marrow. The hemoglobin and red cell levels remained normal until the terminal phase of the illness.

TABLE 2.—*Blood Disorders in Infancy and Childhood Related to Immunoallergic Mechanisms*

1. Affecting blood cell and vascular elements:
A. Red cells:
Acquired hemolytic anemia:
1. Toxic products, drugs, favism
2. Antibodies against red cells
(a) Erythroblastosis fetalis
(b) Blood transfusion reactions
(c) Associated with autoantibodies Primary—Autoimmune hemolytic anemia Secondary—Leukemia, Gaucher's disease
(d) Pure red-cell (chronic congenital aregenerative) anemia?
B. White blood cells:
Agranulocytosis:
1. Anticonvulsants
2. Antimicrobial agents
3. Antithyroid drugs
4. Sulfonamides
Neonatal agranulocytosis
C. Platelets:
Thrombocytopenic purpura:
1. Idiopathic
2. Congenital
3. Drug-induced: Quinine, quinidine, sulfonamides, arsenicals
4. Eczema with purpura and otitis media
D. Red cells, white cells and platelets:
Hypoplastic and aplastic anemia:
1. Idiopathic
2. Drugs, chemicals, infection
E. Blood vessels:
Allergic purpura (Henoch-Schönlein syndrome)
Idiopathic pulmonary hemosiderosis
Polyarteritis nodosa and other collagen diseases
Thrombotic thrombocytopenic purpura (vascular vessel wall in combination with platelets and red cells).
2. Infections: Infectious mononucleosis, susceptibility following splenectomy.

An outline of the blood disorders in which immunoallergic mechanisms are operative is shown in Table 2. This concept is schematically represented in Chart 1.

Chart 1.—Immunoallergic Concept of Blood Disorders

Causative Factors		
Infection, Foods, Drugs, Chemicals, Unknown or suspected	Antibodies	Red cell: Autoimmune hemolytic disease
		White cell: Agranulocytosis, L.E. phenomenon
		Platelets: Idiopathic thrombocytopenic purpura
		Erythrocytes, leukocytes, platelets: Aplastic anemia
		Vessel walls: Henoch-Schönlein purpura
		Vessel wall, erythrocytes, platelets: Thrombotic thrombocytopenic purpura

Pure Red-Cell Anemia (Chronic Congenital Aregenerative Anemia)

Since from an anatomic point of view the maternal and fetal circulations are separated by only two layers of cells, placental transmission of a variety of substances including maternal antibodies, isoagglutinins, and plasma proteins is facilitated in human infants. In addition, serological and biologic evidence has been presented of transplacental transfusions of blood from the baby to the mother through small or gross defects in the placenta. This passage of fetal red blood cells into the maternal circulation through breaks of varying size in the placental barrier accounts for the method by which an Rh-negative woman is sensitized by an Rh-positive fetus. A or B agglutinogens as well as other antigenic substances can similarly be transmitted into the maternal circulation with the production of antibodies to react with appropriate fetal elements.[7]

In addition to the well known effects of isoimmunization in erythroblastosis, other blood disorders may also occur whose pathogenesis can be traced to the passage of agglutinins across the placental barrier. In a case under our observation[7] the onset of anemia dated from the newborn period with the clinical and hematological feature of mild erythroblastosis fetalis. The mother's blood group was O, Rh-positive, and that of the infant and the father was A, Rh-positive. The anti-A serum titer in the mother reached a maximum of 1:128,000. The bone marrow revealed a persistent depression of erythropoiesis but the platelet and granulocyte levels were entirely unaffected resulting in refractory anemia. This blood condition persisted over a period of ten years, the lifetime of the child, in spite of frequent transfusions, use of steroids and a variety of other treatments designed to stimulate erythrogenesis. It was postulated that prolonged depression in red cell production resulted from an antibody directed against the red cells in fetal life and the early neonatal period. In this case the sensitivity of the mother to A agglutinogen was extreme. It should be emphasized that this concept is offered to explain the mechanism of the anemia in this case and does not provide a uniform explanation for the pathogenesis of all cases of this disease.

Autoimmune Acquired Hemolytic Anemia

In addition to cases of acquired hemolytic anemia in which the cause is identified are those cases for which no recognizable cause can be found. These are autoimmune hemolytic anemia due to an unknown mechanism whereby the body produces antibodies against its own red blood cells.

The disease may be acute, self-limited and occasionally fulminating, or chronic and marked by repeated attacks of hemolysis followed by remissions. Frequently the chronic case is marked by insidious onset with a subsequent course of increasing severity. Clinically it is important to separate the primary and idiopathic cases from the secondary or symptomatic cases in which hemolysis is a complication of an underlying disease.

The serum of a patient with both idiopathic and symptomatic acquired hemolytic anemia will generally be found to possess an abnormal red cell antibody which attacks not only the red cells of the patient, but also red cells of blood from normal persons. With rare exceptions the presence of antibody adsorbed on the patient's red cells is detected by finding a positive direct antiglobulin or Coomb's test. A positive Coomb's test in acquired hemolytic anemia in contrast to the negative test in hereditary spherocytosis is frequently helpful in differentiating the two conditions since spherocytosis and reticulocytosis occur in both.

Before the advent of corticotropin and steroid therapy, great reliance was placed on splenectomy for treatment of chronic idiopathic acquired hemolytic anemia. Results were, however, unpredictable; the operation was regarded as successful in approximately 50 per cent of the idiopathic cases, but for how long was not always certain. Since autoantibodies are produced in large measure by the spleen, the removal of this organ should be expected to result in a sharp decrease in their concentration. The variable effect of splenectomy in many cases indicates, however, that the spleen may not be the sole source of antibody. In some cases the antibody titer decreases sharply after splenectomy and in other cases improvement results even with a high titer of antibody.

Idiopathic Thrombocytopenic Purpura

Idiopathic thrombocytopenic purpura (ITP) is a disease of unknown cause that is characterized by a hemorrhagic tendency resulting from pronounced reduction in the number of blood platelets. It occurs in two major types, one an acute self-limited form,

and the other a chronic protracted disease with occasional remissions. Bone marrow examination will determine whether the purpura is secondary to leukemia or aplastic anemia. Banti's syndrome, Gaucher's disease, disseminated lupus erythematosus and other types of secondary hypersplenism are also to be considered.

Recent evidence demonstrating an immunologic mechanism in some cases of idiopathic thrombocytopenic purpura has stimulated interest in this disease and the treatment of it. Information from two sources suggested the possibility that an immunologic reaction might be involved in idiopathic thrombocytopenic purpura. The observation that infants born to mothers with idiopathic thrombocytopenic purpura often were purpuric was ascribed to the transmission of an immune body across the placenta. In addition Evans and co-workers[8,9] presented evidence for a relationship between acquired hemolytic anemia and primary thrombocytopenic purpura. They noted that acquired hemolytic anemia with sensitization of the red cells is often accompanied by thrombocytopenia, and that primary thrombocytopenia is frequently accompanied by red cell sensitization with or without hemolytic anemia. Since acquired hemolytic anemia had been shown to be due to an autoantibody these investigators suggested that primary thrombocytopenic purpura was due to a thrombocyte autoantibody.

Harrington and co-workers[10] demonstrated that an immunologic mechanism was responsible for the low platelet count in many cases of idiopathic thrombocytopenic purpura. Platelet agglutinins were demonstrated in vitro in the plasma of many patients with thrombocytopenia of the idiopathic variety. A factor presumably identical to this platelet agglutinin is capable of inducing thrombocytopenic purpura and altering megakaryocytes in normal recipients of this plasma. The spleen is therefore involved in removing sensitized platelets and of producing platelet agglutinins in variable amounts. Some of the antibody is made in the spleen, the major portion elsewhere. In spite of the evidence that idiopathic thrombocytopenic purpura is based on an immunological mechanism, circulating platelet antibodies have not universally been found with standard procedures.

The pathogenesis of purpura due to drug idiosyncrasy provides information of an immunological nature which is applicable to the causation by other types of offending agents. The fact that drugs such as Sedormid (allyl-isopropyl-acetylcarbamide) neoarsphenamine and quinine can on occasion produce either thrombocytopenic or nonthrombocytopenic purpura led Ackroyd[11] to postulate that the two phenomena are independent, that purpura is essentially a vascular lesion and that thrombocytopenia when present tends to increase the hemorrhagic tendency.

The addition of Sedormid to the platelets suspended in the serum of a sensitized patient causes agglutination of them without complement, and lysis with it. Patients who have recovered from Sedormid purpura possess an antiplatelet antibody in the circulating blood which is capable of destroying platelets. The fact that normal serum had no such effect indicates that the abnormality in the blood of such a person lies in the serum and not in the platelets. In thrombocytopenic purpura due to Sedormid (and probably to other drugs) the antibody acts on megakaryocytes, platelets and capillary endothelium. In nonthrombocytopenic purpura the platelets for some unknown reason escape injury. The drug presumably combines with vascular endothelium rendered antigenic and therefore capable of uniting with antibody. Thrombocytopenia due to quinine presents a similar mechanism, the antigen to which antibody is produced as a complex composed of the union between the drug and platelets.[12]

Congenital Thrombocytopenic Purpura

Congenital thrombocytopenic purpura occurs infrequently but the literature contains many case reports and studies bearing on the pathogenesis.[13,14,15,16] It appears in infants born of mothers with idiopathic thrombocytopenic purpura who have either had a splenectomy or are symptomless and unaware of a lowered content of platelets, in infants born of normal mothers and in infants of mothers with drug-induced thrombocytopenic purpura such as follows the ingestion of quinine.

Current concepts implicate an immunoallergic mechanism in the causation of the disease in infants. According to Harrington[17] one-third of the mothers do not have any demonstrable autoantibodies for platelets and are assumed to have a defect of platelet formation from megakaryocytes as the sole factor causing thrombocytopenia. Mothers with idiopathic thrombocytopenia of this type give birth to normal infants. On the other hand patients with autoimmune idiopathic thrombocytopenic purpura possess a circulating antibody which damages both platelets and megakaryocytes. Mothers with this variety of thrombocytopenia give birth to purpuric infants. The antibodies which cross the placenta into the fetal circulation consist of autoagglutinins for the platelets of the mother and infant as well as isoagglutinins for each other's platelets.

In the case of a normal mother it has been postulated that she develops isoagglutinins for the baby's platelets, presumably on the basis of platelet incompatibility between mother and infant in a manner analogous to Rh-sensitization in erythroblastosis. She may also have been sensitized to platelet antigen

in a previous transfusion or to fetal platelets of a different antigenic composition during pregnancy. The precise nature of the immune substance is not always obvious.

Agranulocytosis

In leukopenic syndromes, substances acting upon leukocytes have been detected which are comparable to the antibodies present in the sera of patients with thrombocytopenia and acquired hemolytic anemias. Moeschlin and Wagner[18] demonstrated, in a case of agranulocytic angina, leukocyte-destroying factors in the serum which were active in vivo and in vitro. Drugs such as aminopyrine combine with a protein in the serum, forming an antigen which causes sensitization with antibody formation. The antibody becomes attached to the leukocytes which are agglutinated and destroyed when they come in contact with the antigen.[19] Not only does the serum of such a patient agglutinate normal human leukocytes in vitro, but injections into a normal person causes a rapid decrease in the number of leukocytes. The destruction of agglutinated leukocytes probably occurs in vivo in the lung capillaries.[20]

Neonatal Agranulocytosis

Lubhy and Slobody[21] observed transient agranulocytosis in successive siblings in the neonatal period. Such a circumstance was explained by transplacental isoimmunization of the mother to a leukocyte factor of her infant in a manner analogous to Rh isoimmunization causing hemolytic disease of the newborn. In these cases agranulocytosis persisted for three to four weeks and in one of the infants it was accompanied by pulmonary infection. The predominance of neutrophilic myelocytes in the bone marrow may represent either a maturation arrest or a depletion of mature cells because of their increased agglutination and destruction in the peripheral blood.[21]

Idiopathic Pulmonary Hemosiderosis

Idiopathic pulmonary hemosiderosis is a rare disease usually occurring in childhood and in young adults and characterized by dyspnea, cyanosis, fever, cough, fatigability and anemia. The development of severe anemia in a child during repeated attacks of bronchopulmonary infection should call attention to this disease. Terminal cardiorespiratory failure resulting from the effects of recurrent pulmonary bleeding is a frequent but not invariable outcome. The course is one of remissions and exacerbations with intermittent hemoptysis and hematemesis accompanied by moderate to severe anemia with acute episodes lasting two to three days but occasionally persisting for several weeks.[22,23,24,25,26]

The disease has been ascribed to a primary developmental defect of the elastic fibers, with fragmentation of them resulting in stasis of capillary vessels and hemorrhages. The failure to find destruction of elastic tissue in all cases led Steiner[27] to regard essential pulmonary hemosiderosis as an antigen-antibody reaction caused by a still unknown sensitizing agent inducing the production of autoantibodies. With the lungs as a shock organ the antigen-antibody reaction produces capillary dilation, stasis, diapedesis, rhexis and increased destruction of red corpuscles and deposits of hemosiderin.

On the basis of this immunoallergic hypothesis, steroids and corticotropin (ACTH) have been advocated. Favorable reports with this treatment require further evaluation of more extended experience because of the great variations in the frequency and severity of attacks. For the effects of acute loss of blood into the lung, transfusions, rest in bed and administration of iron are required.

Allergic Purpura (Anaphylactoid Purpura, Henoch-Schonlein Purpura)

Allergic purpura refers to a type of nonthrombocytopenic purpura accompanied by a pleomorphic and usually purpuric type of cutaneous eruption in combination with gastrointestinal symptoms (Henoch's purpura), painful swelling of the joints (Schönlein's purpura rheumatica) and a tendency to renal involvement. These features are grouped together as the Henoch-Schönlein syndrome with the realization that these symptom complexes can occur individually, in combination or in sequence.

The relationship of the purpuric state to allergic sensitivity is suggested by the symptoms of urticaria, diffuse erythema, subcutaneous and submucous extravasations of blood and lymph. While hypersensitivity is generally considered to underlie the Henoch-Schönlein syndrome, a definite allergen is only rarely identified. Food and, less frequently, bacterial infection and drugs including antibiotics, are suspected as the exciting factors. A large variety of foods have been implicated, chiefly eggs, milk, chocolate, wheat, nuts and beans and to a lesser extent fish, pork, lamb, chicken and a variety of fruits.[11] In one case an insect bite led to swelling of joints, blood-tinged stools and hematuria.[28] While a relationship is suggested clinically, results of skin tests are generally negative and more is gained by eliminating the suspected foods from the diet and observing for the subsidence of symptoms. The high incidence of preceding upper respiratory infections often with beta-hemolytic streptococci and the similarity between the latent period of one to three weeks until the appearance of the hemorrhagic manifestations suggest both a close association between Henoch-Schönlein purpura and acute nephritis, and the hyperimmune nature of both diseases.

A disturbance of the vascular endothelium resulting in increased capillary fragility and permeability is a basic factor in the symptomatology. Osler[29] was

among the first to call attention to the association between arthritis and intestinal symptoms and the erythema group of skin diseases and to emphasize the renal complications.

The Henoch-Schönlein syndrome has been linked[30] with acute nephritis, rheumatic fever and polyarteritis nodosa and other members of the group of collagen diseases. They have overlapping clinical characteristics and a similar pathogenesis based on an antigen-antibody reaction involving the endothelium of blood vessels. The Henoch-Schönlein purpura can thus be classified as an immuno-vascular disorder resulting in a generalized blood vessel disturbance or angiitis affecting the skin, joints, intestinal tract and renal glomeruli.[31]

An antiserum made experimentally from vascular endothelium has been found to produce diffuse hemorrhagic purpura in the skin and internal organs. Following the direction of previous Japanese investigators, Clark and Jacobs,[32] using suspensions of dog vascular endothelium from the aorta and vena cava, produced a rabbit antiserum which when injected into dogs produced generalized nonthrombocytopenic hemorrhagic purpura. The resulting lesions corresponded to the diffuse vasculitis involving small blood vessels with perivascular collections of polymorphonuclear cells, lymphocytes and macrophages observed in Henoch-Schönlein disease. These changes provide a basis for the increased permeability of small blood vessels. An infection, drugs or toxin for example may form a complex with capillary endothelium or platelets along the lines suggested by Ackroyd,[11] with Sedormid therapy thus initiating active immunization. Further confirmation of the concept of Henoch-Schönlein disease as a hyperimmune disease was the application of a precipitin test using a preparation of the aorta of newborn infants. A positive result of a precipitin test with decalcified serum was obtained in six of eight cases of allergic purpura and in three of four cases of periarteritis nodosa.[33]

The L.E. Phenomenon: Relation to Immunologic Mechanisms

The factor responsible for the L.E. phenomenon in patients with disseminated lupus erythematosus is associated with the gamma globulin fraction of the plasma. A generally accepted theory of L.E. cell formation is that the L.E. plasma factor induces specific chemical changes in leukocytic nuclei, the depolymerization of desoxyribose nucleic acid, and that these altered nuclei are later ingested by other leukocytes to form L.E. cells. An alternate theory explains nucleophagocytosis on the basis of antinuclear autoantibodies. That an immunologic mechanism may be responsible for the nucleophagocytosis of the L.E. phenomenon is suggested by the associated evidences of autoimmune hemolytic anemia and of thrombocytopenia in this disease, and the experimental production in vitro of L.E. cells.[34] Nucleophagocytosis produced experimentally by mixing antileukocytic serum with leukocytes from the same source resulted in structures resembling L.E. cells.[35] According to this hypothesis the L.E. plasma factor constitutes an "autoimmune" substance which stimulates antileukocyte antibody. In the presence of the L.E. factor white cells are sensitized and phagocytized by other leukocytes[36] and a high antibody serum would be responsible for both the ultimate development of L.E. cell and the formation of rosettes.[37]

Thrombotic Thrombocytopenic Purpura

Thrombotic thrombocytopenic purpura is an acute febrile disease characterized by thrombocytopenic purpura, severe hemolytic anemia and transitory focal neurologic signs. The varied symptoms and signs are due to widespread intracapillary and intraarteriolar thrombi affecting most frequently the brain, kidneys, heart and spleen. The occlusions are not due to agglutinated platelets alone but to the vascular wall involvement with conspicuous endothelial proliferation.

It has been postulated that thrombotic thrombocytopenic purpura represents an immunohematologic disorder in which the autoimmune process is set in motion against the red cells, platelets, megakaryocytes and vessel wall.[38] The association of pronounced eosinophilia in an occasional case[39] tends further to support this concept. The hypersensitive basis of the histologic picture is analogous to other collagen diseases particularly periarteritis nodosa and lupus erythematosus and to the necrotizing vascular lesions produced by Rich and co-workers[40] in experimental animals by a variety of agents such as foreign proteins, sulfonamides and iodine.

Susceptibility to Infection in Children with Splenectomy

A collateral aspect worthy of note is the susceptibility to infection in children who have had splenectomy. This aspect focuses attention on the spleen as an agent of immunity as has been abundantly demonstrated in experiments with animals.

Important information recently obtained[41] demonstrated the heightened susceptibility to infection in children with chronic anemia in whom the spleen had been removed in order to reduce the number of transfusions. The series consisted of a group of children with chronic hemolytic anemia, hypersplenism, chronic congenital aregenerative (pure red-cell) anemia and thrombocytopenic purpura, as well as two healthy children with traumatic rupture of the spleen.

The infections fell into several well defined clinical categories: Meningitis, fulminating infection and

sepsis, acute idiopathic pericarditis (confined to Cooley's anemia) and acute bacterial endocarditis. In instances in which bacterial diagnosis was possible, the pneumococcus was the most common offender with meningitis the most frequent clinical type of infection.

What was conspicuous was the frequency of serious infection in these children as compared with its relative paucity in adults with splenectomy. In 225 consecutive adult patients (over 20 years of age) in The New York Hospital who had had the spleen removed, only one serious infection occurred, namely, pneumococcic meningitis one month after splenectomy for acquired hemolytic anemia. This experience is in sharp contrast with 14 cases of severe infection in 50 children without a spleen in the same institution, an incidence of 28 per cent. Four patients in the latter group (8 per cent) died in the particular episode of fulminating infection. It should be emphasized that in a group of comparable patients with severe Cooley's anemia and intact spleen, infections of the nature described did not occur. The relation of age of the subject to susceptibility to infection is an intriguing one. The concept of "serological maturity" has been postulated[42] to emphasize both exposure to latent or subclinical infections in childhood and the physiologic changes relating to the acquisition of resistance coincidental with increasing years and not related to previous infection.

These untoward circumstances in children deprived of the spleen suggest more than a fortuitous association between splenectomy and susceptibility to infection, which prompts renewed consideration of the role of this organ in the defense mechanisms of the body. While the number of cases of this complication is small in comparison with the ever increasing number of cases of splenectomy, the potential hazards demand that exact criteria be established in selecting patients of the pediatric age for the operation. While it is impractical to keep children with splenectomy under observation for prolonged periods, close supervision for at least two years after operation—the period of most frequent incidence of infection—becomes obligatory.

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Operative and Postoperative Emergency Use of Hydrocortisone Derivatives and Corticotropin

DUDLEY J. FOURNIER, *M.D.*, and MAURICE GALANTE, *M.D.*, San Francisco

• **Impairment of adrenal function is a great hazard to patients undergoing major operation. The most important adrenal steroids are glucocorticoids (hydrocortisone), 17-ketosteroids, mineralo-corticoids (aldosterone), and small amounts of estrogen and progesterone. Urinary output of 17-hydroxycorticoids reflects overall adrenal cortical activity. Under severe stress this output increases greatly.**

Adrenal replacement therapy is facilitated by the advent of more powerful and more soluble adrenal hormone derivatives. Hydrocortisone hemisuccinate sodium is the agent of choice in surgical emergencies and for management of bilateral adrenalectomy. Fatal adrenal crisis may develop during operation in patients receiving hydrocortisone for long periods of time. Hydrocortisone may be of help in unresponsive shock not due to loss of blood. The usual side effects of the corticoids can be controlled easily.

THE RESPONSE OF A PATIENT to major surgical operation is greatly jeopardized in the presence of adrenocortical impairment.

The most important biologically active steroids secreted by the adrenal cortex may clinically be divided into (1) glucocorticoids, of which hydrocortisone (17-hydroxycorticoid) is the most important, (2) 17-ketosteroids, derived from the adrenal glands in females and from both the adrenals and testes in males, (3) mineralo-corticoids, primarily electrolyte regulating hormones such as aldosterone, and (4) small amounts of estrogen and progesterone.

The urinary output of total 17-hydroxycorticoids reflects the status of overall adrenal cortical activity and ranges between 25 and 35 per cent of the adrenal output of these hormones. The urinary excretion of these steroids is expressed in milligrams of hydrocortisone per 24 hours and averages 7±3 mg. in women and 10±4 mg. in men as determined by the method of butanol extraction and a Porter-Silber color reaction.[5]

The output of hydrocortisone by normal adrenal glands is 25 to 30 milligrams per day. Under severe physical and emotional stress the adrenal output rises to 50 to 100 milligrams of hydrocortisone during the first 24 hours with a gradual decrease to normal in five to seven days (Chart 1).

The advent of more readily absorbable and more powerful adrenal hormone derivatives has facilitated adrenal replacement therapy.[6] The physiological and pharmacological properties of these hormones that are of immediate interest to surgeons are (1) maintenance of life in cases of total adrenal insufficiency, (2) antihypotensive action, and (3) antiinflammatory and antiendotoxic properties.

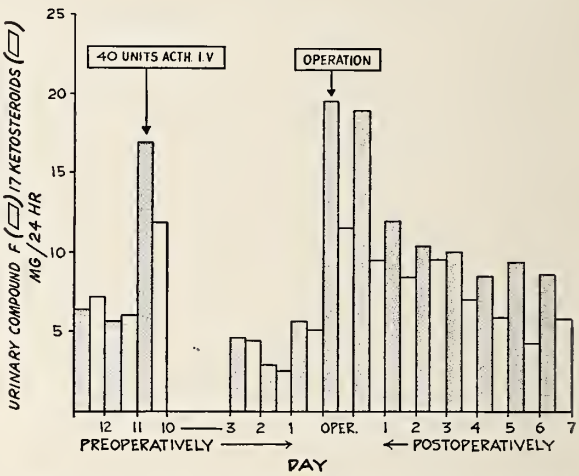

Chart 1.—Response of normal adrenal cortex to operation under general anesthesia (the patient a woman 43 years of age).

PREPARATIONS AVAILABLE

Hydrocortisone hemisuccinate sodium is the therapeutic agent of choice in surgical emergencies. It is a water-soluble crystalline preparation (134 mg. is equivalent to 100 mg. of free hydrocortisone) available in a lyophilized form and may be dissolved in 2 to 4 milliliters of saline solution. It is the only preparation* that can be administered intravenously or intramuscularly in doses of 100 mg. or more without infusion apparatus in order to obtain rapidly a high steroid blood level. It has a half-life of four to five hours and therefore should be administered every six to eight hours. In the presence of normal renal function rapid excretion of hydrocor-

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*Available at the time of this writing.

tisone prevents a cumulative effect. The hormone is available in vials of 100 mg.

Hydrocortisone (free-alcohol) is available for addition to intravenous fluids in ampules containing 100 mg. in 20 ml. of 50 per cent alcohol solution. It is added to 500 ml. of 5 per cent dextrose in water prior to use. Its eosinopenic effect and other biological properties are essentially similar to those of hydrocortisone hemisuccinate sodium. However, the small quantity of diluent required for administration makes the hemisuccinate the agent of choice in extreme emergencies. Hydrocortisone (free-alcohol) is also available in tablet form in doses of 5, 10 and 20 mg. for oral use and as the acetate for intraarticular injection.

Prednisolone is the agent of choice in prolonged corticoid therapy because its antiinflammatory activity is three to four times that of hydrocortisone with less sodium-retaining effect and potassium loss in equivalent effective doses. It is available as 1, 2, 2.5, and 5 mg. tablets for oral use and various injectable forms are being made available.

Corticotropin (ACTH) is available in three forms: (a) as lyophilized powder, 10 to 40 units per vial for intramuscular or intravenous use as an aqueous solution, (b) as a long-acting (12 to 24 hours) gel containing 40 to 80 clinical units per milliliter, and (c) as zinc corticotropin 40 to 80 units per milliliter with a 24-hour-to-48-hour action depending upon the dosage. The gel preparations may be added to 5 per cent dextrose in water for intravenous use if the lyophilized preparations are not available.

In emergency situations corticotropin should *not* be used in adrenal insufficiency with severe hypopituitarism or following adrenal cortical suppression by prolonged steroid administration, because a responsive adrenal cortex is essential for corticotropin to be effective rapidly.[3]

TABLE 1.—*Steroid Replacement Therapy*

Day of operation:
HHS (hydrocortisone hemisuccinate sodium)
100 mg. intramuscularly at the time of incision
50 mg. intramuscularly 4 hours after initial dose
50 mg. intramuscularly every 6 hours thereafter

First postoperative day:
HHS (hydrocortisone hemisuccinate sodium)
50 mg. intramuscularly every 8 hours

Second postoperative day:
HHS (hydrocortisone hemisuccinate sodium)
25 mg. intramuscularly every 6 hours
or
Cortisone acetate
25 mg. every 6 hours orally

Third postoperative day:
Cortisone acetate
25 mg. every 8 hours orally
DCA (desoxycorticosterone acetate)
2 mg. intramuscularly if no edema or heart failure
Begin weighing patient daily

Fourth postoperative day:
Cortisone acetate
12.5 mg. every 6 hours orally
DCA (desoxycorticosterone acetate)
2 mg. intramuscularly

Fifth postoperative day:
Cortisone acetate
12.5 mg. every 8 hours orally

Sixth through tenth postoperative days:
DCA, long-acting (desoxycorticosterone trimethylacetate)

SPECIAL USES

1. *Management of bilateral adrenalectomy:* The rapid absorption of hydrocortisone hemisuccinate sodium permits the surgeon to dispense with the preoperative administration of steroids before removal of both adrenal glands. It is given in doses of 100 mg. intramuscularly during induction of anesthesia and at regular intervals thereafter as indicated in Table 1. This regimen was used for 26 patients who had bilateral adrenalectomy for metastatic breast carcinoma at the University of California Hospital, and there were no postoperative deaths.

The following is a report of an illustrative case:

A 38-year-old woman underwent bilateral oophorectomy and adrenalectomy for metastatic breast carcinoma. Adrenal replacement therapy consisted of administration of 100 mg. of hydrocortisone hemisuccinate sodium intramuscularly at the time of incision, followed by 50 mg. intramuscularly six hours later, and then 25 mg. every six or eight hours until the patient was able to take cortisone acetate orally. Blood pressure was maintained at a satisfactory level and the patient made an uneventful recovery.

2. *Management of adrenal insufficiency secondary to prolonged steroid administration:* Patients who have been given hydrocortisone or its derivatives for long periods may develop a severe or fatal adrenal crisis during or after operation.[4] This crisis is characterized by pronounced hypotension refractory to the usual antishock measures such as blood and fluid replacement and administration of hypertensive agents. The usual maintenance dose of steroids adequate to control the disease under treatment may not be adequate to control surgical stress. Previous therapy with corticoids up to six months before operation may leave a patient without adequate adrenal cortical response to severe stress. The current wide use of steroids makes it imperative that every surgical history include an inquiry into whether the patient has previously been given any of them.

Adrenal insufficiency is best demonstrated by

comparing changes in urinary or plasma 17-hydroxycorticoids before and after stimulation by corticotropin.[1] Normal subjects show a three-fold to five-fold rise over control values of 24-hour urinary corticoid output following an eight-hour intravenous infusion of corticotropin. The fall in circulating eosinophils occurring four hours after an intramuscular injection of corticotropin is an easier, although less accurate, method of determining adrenocortical response. A decrease of less than 50 per cent usually indicates adrenal cortical insufficiency.

In patients with debilitating diseases of long duration, adrenal crises can be prevented by the administration of hydrocortisone before and for a few days after operation. This is best achieved by giving hydrocortisone hemisuccinate sodium as outlined in Table 1. For illustration:

A 54-year-old man with intractable ulcerative colitis had been treated with cortisone and hydrocortisone with only slight subjective improvement. He continued to have severe diarrhea and to lose weight. Six days before operation use of hydrocortisone was discontinued and administration of corticotropin was begun to stimulate the suppressed adrenal glands. Colectomy was done and at operation a pronounced decrease in blood pressure occurred which was unresponsive to administration of whole blood or vasopressor drugs. Normal blood pressure was promptly restored upon intravenous administration of hydrocortisone (Chart 2).

3. *Use as antihypotensive agents:* The use of intravenous or intramuscular hydrocortisone may be of great help in the treatment of unresponsive shock not due to blood loss. Use of this hormone in cases where no definite adrenal cortical insufficiency can be demonstrated may be justified by its apparent ability to potentiate the action of vasoconstrictors.[2] For illustration:

A 30-year-old woman underwent cardotomy for correction of a mitral valve defect. During the second postoperative day a progressive decrease in blood pressure occurred. The pressure did not respond to large doses of vasopressor drugs. The administration of 100 mg. of hydrocortisone intravenously resulted in prompt return of blood pressure to normal levels. The dosage of hydrocortisone was gradually decreased during the next four days (Chart 3).

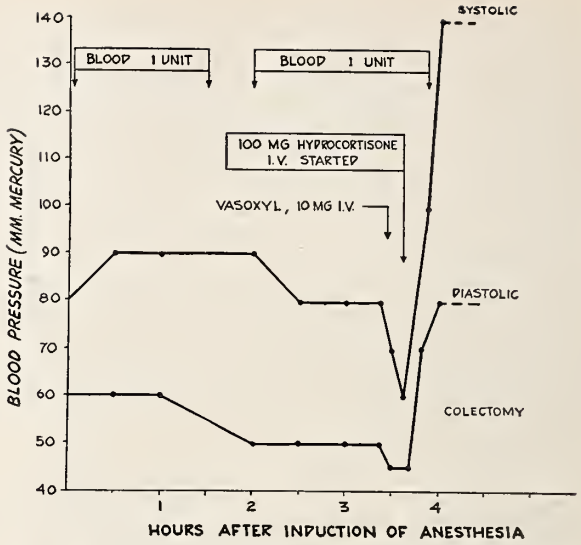

Chart 2.—Blood pressure changes following administration of hydrocortisone to 54-year-old man during colectomy.

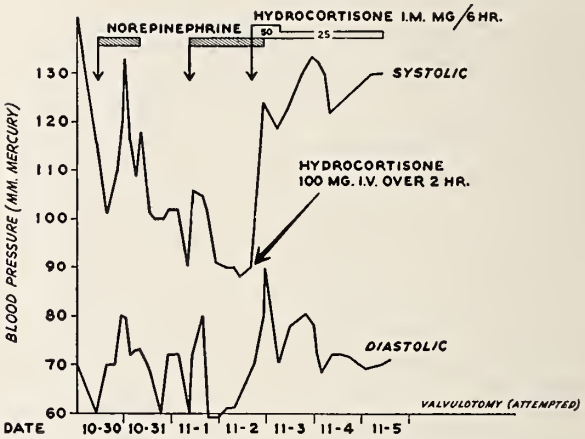

Chart 3.—Use of hydrocortisone intramuscularly and intravenously for shock after failure of vasopressor drug. The patient was a woman 30 years of age upon whom valvulotomy was attempted.

PRECAUTIONS

The use of large doses (over 100 mg. daily) of hydrocortisone may bring about undesirable side effects such as:

1. Impairment of ability to localize infections. The presence of tuberculosis is therefore an absolute contraindication to the use of steroids.

2. Fibroblast proliferation may be retarded with subsequent impairment of wound healing. This is not a serious problem where treatment does not exceed a week in duration.

3. Sodium retention and potassium loss may predispose to edema and hypertension. Malignant hypertension is a contraindication to the use of corticoids.

4. Aggravation of psychosis or epilepsy.

5. Hyperglycemia and glycosuria occasionally occurs and is easily controlled by insulin.

6. Increased secretion of hydrochloric acid by the gastric mucosa makes the presence of a peptic ulcer a contraindication to the use of corticoids.

7. Negative nitrogen balance may occur and thus increase azotemia.

The usual side effects can be easily controlled. Gain in weight due to sodium and water retention can be counteracted by reducing sodium intake and by giving potassium chloride enteric-coated tablets, 1 to 3 gm. three times daily. A high protein diet will help control negative nitrogen balance. If hypertension continues despite salt restriction and diuretic measures, the dosage of hydrocortisone should be reduced or antihypertensive drugs tried.

450 Sutter Street, San Francisco 8 (Fournier).

ACKNOWLEDGMENTS

We are indebted to Peter H. Forsham, M.D., and his staff for their continued consultative help in the management of patients requiring adrenal replacement therapy, and to C. J. O'Donovan, M.D., of the Upjohn Company, for supplying us with some of the material used in the study here reported.

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Control of Nausea and Vomiting

Observations on the Use of Chlor-Trimeton® (Chlorprophenpyridamine Maleate) Syrup

GEORGE A. WESTON, *M.D.*, Santa Barbara

• **Chlor-Trimeton (chlorprophenpyridamine maleate) syrup was effective in preventing and controlling nausea and vomiting in 53 of 57 patients. In doses of one to four teaspoonfuls (2 to 8 mg.), it controlled nausea and vomiting following operative procedures, vomiting due to nonspecific causes, hyperemesis gravidarum, vomiting in altitude and radiation sickness, and vomiting in patients with carcinoma of the colon, acute pancreatitis, and poorly controlled diabetes.**

No untoward effects from the drug were noted.

The syrup was easy to administer, rapidly absorbed, and apparently provided a local anesthetic effect on gastric mucosa.

THE ANTIHISTAMINE Chlor-Trimeton® (chlorprophenpyridamine maleate) in syrup form rapidly relieved nausea and vomiting from various causes in 53 of 57 patients. This constitutes, so far as is known, the first report of the use of an antihistamine in this dosage form in the control of nausea and vomiting. Various other antihistamines, however, have been used orally and parenterally to prevent or relieve nausea and vomiting following surgical procedures,[4,15,25,28] hyperemesis gravidarum,[12,21] vomiting in radiation sickness,[1] psychogenic vomiting,[17] and vomiting following the administration of morphine[24] and contrast media.[2]

This clinical effect may be anticipated from some of the demonstrated actions of antihistamines. Diphenhydramine, for example, raised the threshold for electrical stimulation of the vomiting center of cats.[22] Antihistamines possess antivagal action,[11,23] as became apparent in a study of the use of Chlor-Trimeton in auricular fibrillation.[27] Such action may have been exerted by Chlor-Trimeton in reducin gastric acidity in patients with peptic ulcer, as was reported by Isaacson and co-workers[16] and by Ziporyn.[30] In a study of antihistamines in motion sickness, one investigator[5] noted that the effectiveness of these drugs "can be roughly predicted on the basis of [their] anticholinergic properties." Dimenhydrinate was reported[5,6,14] useful in motion sickness, but Chinn and co-workers[7] in a carefully controlled study concluded this drug afforded "no significant protection." Prophenpyridamine, the parent substance of Chlor-Trimeton, was one of the compounds in the group studied by Chinn that effectively protected against seasickness. The prevention and control of nausea and vomiting attendant on motion sickness by prophenpyridamine also has been shown in other studies.[8,9,10]

CHOICE OF DOSAGE FORM

Soon after a report of the control of nausea and vomiting by antihistamines intravenously,[19] a study of the oral use of Chlor-Trimeton for this purpose was begun at Santa Barbara Cottage Hospital. Chlor-Trimeton was chosen because in previous studies it had proved superior to diphenhydramine in many respects. Chlor-Trimeton syrup was used because of ease of administration, pleasant taste and rapidity of absorption. It was also thought that a syrup would spread and thus provide uniform local anesthetic action on the gastric mucosa. The similarities observed in the actions of local anesthetics, anticholinergic drugs and antihistamines[3,13,20] suggested that local anesthesia may also be a part of the action of antivomiting drugs. Local anesthetic effects have been demonstrated for antihistamines.[18,26,29] That local anesthesia was a factor in the action of Chlor-Trimeton syrup was shown in the present study by the fact that nausea was relieved almost immediately after the syrup was swallowed—too soon for the drug to be absorbed and act systemically.

PRESENT STUDY

The dosage of Chlor-Trimeton syrup for prevention or control of nausea and vomiting was determined clinically by trial and error. The dosage ultimately adopted was 4 teaspoonfuls (8 mg.) initially for nausea and vomiting and then 2 teaspoonfuls (4 mg.) every three or four hours, or as required, for nausea. No ill effects were noted from doses of

Submitted December 19, 1956.

this size nor from twice these amounts in occasional patients. No tolerance to the drug developed during administration for five to six days. In two patients who received it for two to three weeks, tolerance did develop so that even increased doses were not effective.

Postoperative nausea and vomiting. Nausea and vomiting following operation on the breast, rectum or gallbladder, appendectomy, thyroidectomy or other routine surgical procedures in 23 patients were treated with Chlor-Trimeton syrup. In 22, nausea was quickly relieved and vomiting ceased. The following brief case reports illustrate the results obtained.

CASE 1. The patient, a woman with history of severe postoperative nausea and vomiting on several occasions, had such an episode after an operation on the breast. The oral intake of fluid fell to a few cubic centimeters, which the patient could not retain. Chlor-Trimeton syrup in a dosage of 4 teaspoonfuls (8 mg.) initially and 2 teaspoonfuls (4 mg.) after three hours relieved the nausea and vomiting. After the two doses, the patient was able to take fluids orally. She was discharged the following day.

CASE 2. A man had severe nausea following ligation of a vein. He was unable to stand. Within a few minutes after the administration of Chlor-Trimeton syrup, nausea disappeared. Within an hour the patient could sit in a chair.

CASE 3. The patient, a woman, had nausea and vomiting for 24 hours after an operation on the breast. Chlor-Trimeton syrup, administered at the end of this time, relieved symptoms within five minutes. She then could readily take fluids by mouth.

Hyperemesis gravidarum. The dosage of Chlor-Trimeton syrup for the control of nausea and vomiting in pregnancy was 4 teaspoonfuls (8 mg.) on arising, with 1 teaspoonful (2 mg.) as needed for nausea. Fourteen of 15 patients were relieved by this treatment. One patient did not respond and remained refractory to all therapy for a period of two to three months. One patient developed a tolerance to the antihistamine after two to three weeks' use but by that time nausea had become minimal.

One pregnant patient with nausea and vomiting was hospitalized because of dehydration. The oral fluid intake was 300 to 400 cc. daily. This was increased to 2,100 cc. at the end of the first day after the administration of Chlor-Trimeton syrup was begun, and to 2,500 at the end of the second day. The patient was discharged without prescription for continued use of the drug. Severe nausea and vomiting recurred two days later. Another therapeutic agent used by the attending physician proved useless. Chlor-Trimeton syrup again afforded relief.

Nonspecific nausea and vomiting. All 12 patients with nausea and vomiting from nonspecific causes were satisfactorily relieved with Chlor-Trimeton syrup. One patient had vomited eight to ten times daily before receiving Chlor-Trimeton. In that case, one-half teaspoonful (1 mg.) controlled the vomiting at first. The dosage had to be increased to 1 teaspoonful (2 mg.), and then to 4 teaspoonfuls (8 mg.) because of increased tolerance. The drug was discontinued thereafter due to the large amounts necessary to control symptoms.

Other conditions. A patient with poorly controlled diabetes and extensive tuberculosis was unable to retain food and ingested fluids and had been fed intravenously for four days. The average daily oral intake of fluid was 300 cc. At the time an intravenous feeding was to have begun, Chlor-Trimeton syrup was administered instead. During the first afternoon and evening, the patient received 2 teaspoonfuls (4 mg.) of Chlor-Trimeton syrup every two hours and 2 or 3 ounces of water every 30 minutes. Severe epigastric burning was relieved almost immediately. Within a few hours, 500 cc. of water had been retained. The following day the patient retained 2,500 to 3,000 cc. of fluids and began to eat a soft diet. Two teaspoonfuls (4 mg.) of Chlor-Trimeton syrup was given for nausea. This regimen was continued for a week. The use of the antihistamine was gradually reduced and finally discontinued and the patient remained free of nausea and vomiting.

Conservative treatment and intravenous feedings for one day did not benefit one man with acute pancreatitis who had severe vomiting. Chlor-Trimeton syrup controlled the vomiting almost immediately and relieved the nausea. The patient could then take fluids and food by mouth.

Chlor-Trimeton syrup stopped vomiting in a patient with carcinoma of the colon. Nausea was satisfactorily controlled with the drug for several days preceding death from pulmonary causes.

Severe vomiting on two occasions followed x-ray therapy to the spine in one patient. On three subsequent exposures, Chlor-Trimeton syrup administered at the first sign of nausea prevented further distress.

One patient, a woman 26 years of age, who had previously become nauseated and vomited when reaching high altitudes, was treated with Chlor-Trimeton syrup and for three days while she was taking the drug the condition was controlled. Nausea and vomiting returned when the supply of syrup was exhausted.

Chlor-Trimeton syrup also was administered to two patients with nausea and vomiting following an alcoholic spree. Neither was relieved.

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Problems of Homosexuality

NORMAN REIDER, *M.D.*, San Francisco

• **Moral, religious and legal attitudes in attempts to control sexual behavior have interfered with a clear view of the medical and psychological aspects of homosexuality. This phenomenon is probably much less destructive of social aspects of our society and culture than is generally believed, since it is actually more widespread than is generally acknowledged.**

Homosexuality probably has hormonal and undoubtedly social and psychological factors, the latter of which are the only ones which can be worked with successfully in our present state of knowledge. A general practitioner's task is to aid those who wish and need help with this problem in finding psychiatric treatment in the same way that persons with any other emotional disturbance are referred. This should be carried out without bias just as with any other emotional disturbance.

HARDLY ANY MEDICAL SUBJECT is more ambiguous and confused than that of homosexuality, and it is a most difficult subject for the clinician to delineate in a scientific or even empirical way. For centuries homosexuality has been more a moral and legal than a medical concern. Throughout the ages people have tried to make criminal law enforce their ambitions regarding moral law, especially in their attempts to control sexual behavior. Among sex laws, none are so punitive or inequitable as those concerning homosexual acts, particularly male homosexual activities.

Religious traditions and attitudes against homosexuality have thus been extended into substantive law out of all proportion to the social damage involved in most homosexual acts. Sin is confused with crime, and vague laws about sexual behavior give law enforcement officers a dangerous discretionary power. Sexual acts are not differentiated from criminal acts. Of course there are sexual acts that harm others and against which society must protect itself. But these are not clearly differentiated from sexual behavior that merely "tends to affront certain people"; and men are imprisoned for acts that did no damage to another person.

The great majority of homosexual acts do not endanger the social structure or disrupt the family. No doubt many early societies considered homosexual activity a threat to family and societal solidarity, and taboos arose; but when these are examined they can be seen as part and parcel of man's fears of his own impulses—drives for which he sought controls. Modern studies like those of the late Dr. Kinsey and his associates serve to show that society has little to fear from homosexual activity. Yet the fear remains, in that a homosexual person continues to be the object of extraordinary punishment or the butt of derisive jokes and contempt. We should remember, when we participate in such attacks, that we follow the age-old formula of trying to fight off or laugh off something that we either do not understand or fear. This extension of old taboos into moralistic and legal attitudes still muddles the issue of what is essentially a biological and psychological phenomenon and only secondarily a social one.

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THE EXTENT OF HOMOSEXUALITY

The problem of homosexuality is even more extensive than the Kinsey data showed. According to Kinsey, about a third of white males between adolescence and old age have had some type of homosexual contact to the point of orgasm, but only four or five per cent are exclusively homosexual. A much smaller proportion of females at any age are primarily or wholly homosexual; and very few continue their homosexual activities as long as do men. Men are likely to be far more promiscuous than are women; only about half restrict their relationship to a single partner or two, as compared to three-fourths of the women. These and other Kinsey data point to a greater extent of homosexuality than is commonly believed.

CLINICAL VIEW OF HOMOSEXUALITY

The Kinsey studies reported the amount of homosexual behavior in various persons, but did not determine clinically who was a homosexual. Are all 37 per cent of males who have had at least one homosexual contact homosexuals—or just the 4 per cent who have only homosexual outlets? If we define a group midway between these extremes as homosexual, we ignore the fact of a gradation of sexual activity, interest and preoccupation that ranges from one to the other extreme. We overlook the historical and developmental approach that de-

notes both biological and psychological roots for homosexuality.

The biological roots are clear: A phase in our ontogenetic development when the undifferentiated organism has the potential of developing into either sex. Psychologically, too, we receive tenderness, affection, abuse and cruelty at the hands of both men and women. So many factors in the history of each person shape his sexual destinies that to make the cause of homosexuality a simple one is not to face the facts.

Some observers believe that homosexuality is merely a matter of constitution and biochemistry, although present knowledge shows no basic difference in either constitution or biochemistry between the homosexual and the heterosexual. One should therefore strongly suspect claims about a cure of homosexuality by hormonal treatment. A British report on recent developments in psychoendocrinology stated that homosexuals cannot be changed to a more masculine attitude. "In most of them," the report said, "testosterone merely accentuates the homosexuality. In general, its action is to increase the quantity of the sex drive without in any way altering its main direction." Far more evidence indicates that environmental and developmental factors help to shape the individual's avenues of sexual outlet. But research in the whole area has only begun to tackle the problem of cause.

A story of my clinical experience in southern California some years ago will illustrate the complications involved in the evaluation of hormonal treatment. The medical literature at that time contained favorable reports of treatment of homosexuality by androgens, and it acquired a certain vogue. Several California jurists who knew the futility of sentencing homosexuals to jail began sentencing the convicted person to undergo treatment. Some persons were sentenced to have hormonal treatment, others to have psychiatric treatment. As a result of these efforts further articles reported successful treatment with androgens—successes that I as a psychiatrist envied.

One day a young man came to my office to consult me about a problem that only skirted on his homosexuality. A confirmed homosexual, he had little anxiety about his activities because he considered himself a constitutional homosexual and felt relatively blameless. In the exploratory course of our discussion he said that he had once been treated by androgens, not entirely of his own will, as the result of a court sentence. He then described how he and several of his associates had contrived to "respond" to the treatment, varying their stories so as to give them the hue of veracity. He said that he arrived late for his first appointment and grumbled at the injection. The nurse reminded him to return for his next one "or else." Next time he complained of noticing no improvement at all. On the third visit he told the nurse he was depressed and said that he and his boy friend had fallen out and might separate. Next time he was more depressed and was moving out, he said, because he could not tolerate his boy friend. The fifth time he carefully implied he was less depressed, and reported no difference except that he had no desire for anything or anybody. On the sixth visit he told the nurse: "A simply fantastic thing happened. I've been going to a local bookstore for years and never noticed before a very pretty girl who works as a clerk there." By the seventh visit he reported making a date with the girl and at the end of treatment he claimed satisfactory sexual relations with her. This case figured in a published report of successful treatment. Meantime this patient and his companions who had also been treated went on with their homosexual activities, except that some of them suffered from an increased drive—the result of the injections of androgens. How much of the exacerbation was biochemical and how much psychological, no one knows. Nor does anyone know to what extent similar ruses may have distorted medical results reported in the literature.

In the etiology of homosexuality, constitutional and hereditary factors cannot be ruled out as possible factors. From a pragmatic view, a large amount of evidence points to developmental factors, chiefly those connected with masculine or feminine identifications, as probably the most important ones. There are multiple reasons why a young boy might fear to identify himself with what he considered masculine trends and so be forced to adopt feminine attitudes, habits and wishes. In our society a happy male child evidently goes through various stages of identifications and choices of the object of his affections. At first he prefers himself, then he is greatly attached to his mother. In later childhood, under the molding influence of environment, the boy for a period prefers his father and spurns as "sissy" any show of affection toward women. With adolescence his interests begin to shift once more toward girls. The things that may block this normal development or stop it at any stage because of one trauma or another—threats as to sexual activity, rejection by one or the other parent—are too many to list and even more difficult to evaluate. Even in clear-cut histories of early seductions, their role in the causation of homosexuality is hard to determine.

However obscure the etiologic trails, we know more about the vicissitudes under which homosexual manifestations take place. The homosexual is not alone in taking only a member of his own sex as object choice. We all have homosexual object choices which indeed most of us satisfy in so called sublimated ways. Our pursuits with pals, our most intimate in-

tellectual and social friendships, our arm-in-arm singing at the piano after a few beers, our sports activities—all have in the broad sense some sort of homosexual connotations. These we value and enjoy without guilt or shame. No one is so masculine as not to expect some friendship or tender affection from a member of his sex. These things stem from our early childhood sexual wishes—sexual in the widest meaning—from the emotional life so intimately connected with our physical beings and the spiritual aspects of love. This point needs emphasis because of too much palaver about spiritual expressions of love as somehow being unconnected with our biological history.

Besides the mild and socially acceptable expressions of sublimated homosexuality, many other manifestations appear. Although not particularly abnormal or peculiar in the course of ordinary masculine activity, they yet indicate how protean are the forms and relics of homosexual wishes. For example, many a man is more potent and has a much more satisfactory heterosexual relationship after "a night out with the boys." Many a man, often without realizing it, feels keener, more intense interest in the woman's sexual experience than in his own. Indeed his partner's frigidity may cause him much frustration in his sexual life not only because he feels he is not proving himself a man but also because she does not let him share in feminine pleasures. Many men secretly envy women's creating and nurturing qualities and activities. Fortunately, the social trend now makes acceptable such masculine envy of women; the tables turn and we hear much less about feminine envy of men. The line is hard to draw between these normal manifestations of homosexuality and near-pathological activities. Surely a patient addicted to prostatic massage satisfies some homosexual needs that may bear scrutiny under a psychological microscope. Likewise a physician who unwittingly plays partner to this game may well scrutinize his role.

Such complex psychological attitudes clearly show that psychologically we are not wholly one sex or the other. Our deeper understanding of homosexuality has also affected our nosological concepts of mental illness. For instance, often homosexuality, as such, harms a person less than does the fear of homosexuality. Many homosexual conflicts that bring a patient to a physician or psychiatrist for the first time have little to do with homosexuality. The patient really fears some dissolution of his psychic apparatus or of his integrity as a person, and he picks on homosexuality as a first sign of dissolution. Many schizophrenic breaks first began with fears of homosexuality: that is, the concern about homosexuality is symptomatic, just as alcoholism is symptomatic of a much more important underlying emotional illness.

TREATMENT

Very little is known about therapy of homosexuality. Just as the extent of homosexuality is greater than commonly believed, so the recoveries from distressing homosexual conflicts are probably more than we think. Doubtless a good many persons through experience, kindness, tenderness and understanding are helped to get over their difficulties in ways we can now only speculate about. Many a homosexual person embarks upon heterosexual experience or even marriage in the attempt to cure himself and sometimes he is successful. Clinicians do not see these successes, but rather the failures of such heroic attempts. Sometimes hormonal treatment is successful. I get the impression in review of such "successes," that psychological, suggestive factors have had more importance than the chemical ones, and that no real cure has resulted.

Psychological treatment does not offer a much brighter picture. Homosexuality as such can hardly be treated because treatment of the underlying emotional disturbance is the essential thing. If homosexuality is touched, all to the good; if not, treatment can often enable the patient to accept his condition with more grace and ease, with less shame and guilt, so that he tends to get into less trouble than before. With some gain in clinical knowledge, satisfactory cures by psychiatric and especially by psychoanalytic treatment have slowly increased, but as yet the number is very small. Treatment is long and most difficult, and the course of a successful treatment very hard to report and explain.

To understand part of the difficulty, take one analogy: It is in general just as hard to change a homosexual's object choice as it would be to change a heterosexual into a homosexual. A case in point is that of a man prominent in public life, who consulted a well known psychoanalyst, saying bluntly: "I'm a homosexual with many compulsions and obsessions. I can't pass a gate without wanting to run my fingers or cane along the pickets. I have to go back ten times to make sure I've locked the door. I have to count to a certain number before starting any undertaking. I feel perfectly comfortable with my homosexuality. I have many agreeable companions who share my views. But my compulsions interfere with my life and I would like treatment for them without touching the homosexuality. Will you treat me under these conditions?"

The analyst replied that because homosexuality is so extremely difficult to cure they could undertake treatment, with the patient's understanding how small the chance for such outcome. The man entered treatment and at the end of two years he was cured of homosexuality. He married happily and had two children. But, alas, all his compulsions and obsessions remained intact and untouched.

THE GENERAL PHYSICIAN AND THE HOMOSEXUAL PATIENT

The general physician in his role with homosexual patients had best restrict his activities to what may be called minor psychiatry. To practice it, he must form his attitudes from some understanding of medical psychology and not from the statute books. He or anyone who handles these problems must drop his judgmental attitudes and not discuss homosexuality with the patient or his parents as if it were a sin. The physician should allay parental anxiety, especially with patients in childhood or early adolescence, in whom experimental curiosity may play a large role.

If the physician believes that a real problem exists because of a conflict to be resolved, the patient should be referred to a psychiatrist for evaluation and a consideration of means of treatment. If psychiatric help is advised and the patient refuses it, the general physician at best can only counsel him to keep out of trouble—to choose his companions discreetly, not to pick up strangers in public toilets or invite them to his home for homosexual purposes —and inform him about the chances of blackmail or other entrapment and arrest. Because treatment is so difficult, only those with the greatest knowledge, training and experience should attempt it.

At times the patient will refuse even a referral for psychiatric evaluation. He may try arguments, persuasions, even threats. Often he will insist that because he has great confidence in him, the general physician continue the attempts at therapy. This places the physician in a most difficult dilemma. Sometimes he may be strongly tempted to work some magic trial of hormonal treatment or to delve into the patient's psychic apparatus. The physician would do best to withstand the temptation to an involvement that may indeed carry him away into dark seas of interpersonal relationships where even the most gifted mariners may lose their way.

It is encouraging to see that a favorite treatment of a generation ago has waned—the attempt at cure by arranging a sexual alliance with a prostitute or a knowledgeable substitute, a device not infrequently used even by some psychiatrists. Such attempts to teach the homosexual the facts of life or to make a man of him have precipitated more than one schizophrenic break.

The general physician, often the first to be consulted by the homosexual, must be prepared to deal at the start with cases of great psychological complexity. Homosexuals are liable to be hostile or paranoid and to present problems bordering on addiction or psychosis. Again, however offensive the behavior, shaming or deriding or reviling has no more place in the treatment of such persons than in the treatment of any other medical condition.

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Amyotrophic Lateral Sclerosis Among Guamanians in California

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• Amyotrophic lateral sclerosis is known to be prevalent among the Chamorros or natives of Guam and the other Mariana Islands. In a survey of adult Chamorros who had been residing in California it was found that the prevalence was equally high among that group.

Guamanians residing in California were found to eat diets similar to those of other Californians and to be living in housing which was similar to that of the other California populations of the same income status. A few native articles of food which were received occasionally by some of the Guamanians were not believed to be of etiologic significance in ALS.

The data on the prevalence of ALS among the Guamanians in California suggested that change of environment from Guam to California does not prevent the disease in persons predisposed to it. The data support the view that ALS is due to a genetic mechanism.

A STUDY WAS MADE of the comparative prevalence of amyotrophic lateral sclerosis among Guamanians residing in California and among those in Guam. (The amyotrophic lateral sclerosis syndrome and its essential components, progressive muscular atrophy and progressive bulbar palsy, are generally referred to as motor neuron or motor system diseases. The initials ALS will be used herein to refer to this disorder.)

ALS is about 100 times more prevalent among the Chamorro people of the Mariana Islands than in other populations of the world.[1,4] In Guam at any one time, one per cent of adult Guamanians are affected with the classical ALS syndrome whereas only one in 10,000 adults in the continental United States is so affected. About ten per cent of deaths in Guamanian adults are due to ALS in contrast to a death ratio of one per 1,000 adult population in other areas.[3] The clinical and pathological features of ALS in the Mariana Islands have been described in detail in other reports.[1,2]

In the Mariana Islands, of which Guam is a part, ALS is highly prevalent only among the Chamorros, the indigenous population of that island group. The prevalence is not increased either among the large number of United States ("stateside") military personnel on Guam or among the natives of the Caroline Islands who migrated to the Marianas many years ago.

Native legend has it that ALS has been prevalent in Guam for over one hundred years, and the Chamorros believe the disease to be familial. Familial aggregation of cases of ALS were, indeed, frequently encountered in earlier surveys.[6,2,7] It was not possible, however, to obtain complete and accurate pedigrees of families on Guam because of the uncertainty of some family relationships, the near absence of written records due to destruction of church and civil archives during the recent World War invasion, the lack of medical information about progenitors and the reticence of many in the population because of the stigma Chamorros frequently associate with this disorder. Although there is suggestive evidence that ALS on Guam is an inherited disorder, it has not been possible to obtain sufficiently accurate pedigrees to justify the conclusion that an endogenous etiological mechanism was responsible for the high incidence of the disease among the Chamorros.

It seemed that, if it could be shown that ALS continued to be highly prevalent among Guamanians residing outside the Mariana Islands, this would be further evidence that heredity and not environment played the more significant etiologic role in this disorder.

The Chamorros today are a heterogeneous mixture of the original settlers of the islands* with Spanish, Filipino and other racial strains added. Today, they number about 38,000, about 35,000 of whom reside in Guam, about 2,000 in the other Mariana Islands and about 1,000 in the continental United States.

The exact number of Guamanians living in the United States is unknown since, as United States

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*The origin of the indigenous population of Guam and the other Mariana Islands is uncertain. It is believed that the island was first inhabited about 2,000 years ago by seafarers from Malaya or Indonesia.

citizens, they may freely migrate to and from the territory of Guam. However, it is estimated that about 250 families now reside in the continental United States and that about 150 of these families are in California. A few Guamanians are said to have settled in California after their arrival on whaling ships in the latter part of the 19th century. A few dozen families are believed to have settled in the continental United States before 1940, and the remainder after the end of World War II. The greatest influx has occurred since 1950. In most instances, young men who enlisted in the military forces before and after World War II have, upon assignment to California, settled there and brought over fiancees or wives and children at a later date.

METHOD OF STUDY

In the present study carried out during the summers of 1955 and 1956 attempt was made to locate and interview all adult Chamorros residing in California. Persons with history of weakness, spasticity, dysarthria or other suspicious neurological conditions were examined for evidence of ALS.

A roster of Chamorros residing in California was developed with the aid of the members of the California Sons and Daughters of Guam Club. All persons who were interviewed were asked about all their Chamorro acquaintances.

The following information was sought for each Guamanian interviewed: Place and date of birth; length of residence in California; dates and duration of return visits to Guam, if any; nature and type of the present diet; type of food or other items, if any, received from Guam.

Special attention was given to determining whether the California group proportionately represented the population from all the villages on Guam, since earlier studies indicated that the disease is more prevalent in the southern villages of the island than in others. The studies on Guam also suggested that the ALS incidence rates are higher in the lower income families. However, it is uncertain whether the attendant impoverishment was related to the cause rather than the effect on wage-earning capacity of the disease in parents or grandparents who might have been affected in previous generations.

An evaluation of the economic status of the Chamorros interviewed in California was also attempted. Since it was not feasible to make a detailed inquiry, the interviewers resorted to a cursory observation of the dwellings, furnishings, sanitation and other physical evidence of the relative state of poverty or wealth.

Attempt was made to obtain a detailed family history with special emphasis on occurrence of amyotrophic lateral sclerosis. Since the disorder carries some degree of stigma in Guam, it was not surprising that some of the persons interviewed denied any knowledge of the disease, in spite of the fact that siblings or parents who had been observed in Guam had succumbed to the disease. A few persons would not assent to interview. In view of these circumstances, the data on family history cannot be considered reliable for the group as a whole.

TABLE 1.—*Residence in California of Guamanians Interviewed in Survey*

	Male	Female	Total
San Diego County area	46	48	94
San Francisco Bay area	27	26	53
Los Angeles County area	10	8	18
Total	83	82	165

RESULTS

One hundred and sixty-five adults, 83 men and 82 women, were interviewed. Of this group, 154 replied to all inquiries.

Sixty-six or 43 per cent of the total were under 35 years of age. Since ALS infrequently occurs before age 35, a substantial proportion of the group was in the lower risk age bracket.

For the entire group, the average period of residence in California was 7.4 years. At least 80 per cent had resided in the continental United States for less than ten years. Twelve per cent had been in California for 15 to 25 years and two per cent for more than 25 years.

The Guamanian families are found in many communities of California but they tend to be concentrated around the San Diego Bay area, the San Francisco Bay area and in Los Angeles County (Table 1). Many of the men were still in the Navy and their families resided in Navy housing facilities. Others settled in the Bay Area or San Diego County area after discharge or retirement from the Navy.

Most of the subjects interviewed had been residents of the northern villages on Guam. However, every Guamanian village was represented in the population interviewed.

It was the investigators' impression that housing, sanitation and diet of the Guamanian families interviewed were similar to those of the non-Guamanians in the same area. A few admitted receiving Guamanian articles, such as manahag (a small salted fish), achote (a coloring substance for rice) and betel nut. These substances were not incriminated as causative factors in the Guam studies.

Ten of the subjects interviewed said that other members of the family had died of ALS. (That this is probably a minimal figure may be assumed for reasons previously noted.)

Two men in whom ALS was suspected were found among the 165 subjects interviewed.

CASE 1. A 41-year-old Guamanian, a steward's mate in the U. S. Navy, was first seen at the sick bay of the U. S. Naval Auxiliary Air Station, El Centro, California, in December, 1954. At that time, he complained of painless weakness in the left hand which had started approximately four months previously. Upon physical examination at that time it was noted that there was mild weakness and atrophy of the left hand with weakness of the individual muscles of extension, flexion and abduction and adduction of the thumb. No pathologic reflexes were evoked. In routine laboratory studies and chest x-ray examination no abnormalities were observed. The blood pressure was 142/102 mm. of mercury.

No specific treatment was given. The patient was returned to duty a week later.

A year and a half later the patient was admitted to the U. S. Naval Hospital, San Diego, with symptoms of advanced ALS. At that time he complained of some nasal regurgitation of fluids. Pronounced atrophy of the interossei muscles, bilaterally, with concomitant weakness of the hands was observed. Atrophy and muscle fasciculations were noted about the shoulder girdle as well as in the tongue. There was decided weakness of all movements of the left ankle. The deep tendon reflexes were exaggerated throughout, except for the left ankle jerk, which could not be elicited. The sign of Babinski was present bilaterally. Results of routine laboratory studies and electroencephalograms were all within normal limits.

On examination two months later, other evidence of bulbar and pseudobulbar involvement was noted. Moderate dysarthria and dysphonia were present, as well as a sucking reflex and the nasal regurgitation previously mentioned. The patient was still able to walk about, but only with assistance.

The patient was the youngest of three siblings, the older two living and well. Both parents were about age 60 years and in good health. One first cousin in Guam had advanced ALS.

The patient had enlisted in the U. S. Navy in 1938 when he was 23 years of age, had come to the United States the same year and had been in this country or aboard ship ever since, except for a two-year period between 1948 and 1950 when he was stationed on Guam.

CASE 2. The patient was a 38-year-old laborer who had resided in California without interruption since 1940. An aunt had recently died of ALS in Guam. The patient had noted slowly increasing painless atrophy of the thenar and dorsal interossei muscles of both hands over the preceding few months. He had no other complaints. In addition to the atrophy and weakness of intrinsic muscles of the hands, there was weakness of the left deltoid muscle. Fasciculations were present in the muscles of the left shoulder girdle, right triceps and occasionally in the right calf muscles. The left bicep and brachioradial reflexes were hyperactive as compared to those reflexes on the right side. Coordination, sensory examination, intellect and bladder sphincter control were normal. There was no discomfort on rotation, hyperextension or hyperflexion of the head on the neck. The onset of symptoms in this patient was similar to that in scores of ALS patients observed in Guam, and although a definite diagnosis could not be made so soon after symptoms were first noted, the diagnosis of amyotrophic lateral sclerosis was strongly suspected.

If both the cases described were cases of ALS, two of 165 (1.2 per cent) of the adult Guamanians examined in this study were affected. As was noted earlier, this is about the same as the prevalence among adults on Guam or about 100 times that expected in similar samples of the indigenous population of California.*

In addition to the patients observed in the surveyed group, the investigators learned of five other patients among the small population of Guamanians who had resided in California in previous years.

The following experience was described by an elderly Guamanian who had retired in California and who was interviewed in the course of the present study:

As a young seaman, he said, he had visited California on many occasions. In 1910, he was asked by friends in Guam to visit two brothers who had arrived from Guam about 1885 and had settled in San Francisco. In 1908 progressive painless paralysis developed in one of the brothers, and the following year the other brother also became affected. Both patients were about 50 years of age.

The narrator was unable to recall the names of the brothers but his meeting with these two men was an otherwise unforgettable experience. He described the typical wasting of the hands, dysarthria, dysphagia and the spastic gait he had observed. Neither brother had complained of any pain and both were alert and responsive. The brother with advanced disease died the following year; the other, about a year later.

Two other cases came to the attention of the investigators in the present study from the rosters of ALS patients who were observed in U. S. Naval Hospitals in California between 1947 and 1953.

The first patient was born in Guam in 1910, enlisted in the Navy and was assigned to California in 1941. In November, 1947, he noted weakness and muscle twitchings in the lower and then the upper extremities. A diagnosis of ALS was made the following year and the patient returned to Guam. He had a typical progressive course with both upper neuron and lower motor neuron involvement. He

*The probability of finding a random sample of 165 non-Chamorro adults in California in which two are affected with ALS, and if the true prevalence is one in 10,000, is less than .002.

remained at the U. S. Navy Hospital on Guam with a diagnosis of advanced ALS and died in April, 1950.

The second patient was born in Guam in 1921 and enlisted in the U. S. Navy before World War II. He resided in California when he was not aboard ship. In 1951, weakness and wasting in the extremities developed. The patient had a typical progressive course and died 30 months after onset at the Veterans Administration Hospital in Los Angeles. At necropsy it was noted that the immediate cause of death was bronchopneumonia. Pronounced atrophy of the skeletal muscles of the extremities was observed. Upon examination of the central nervous system it was noted that there was degeneration of neurons in the anterior horns of the spinal cord and their analogues in the medulla. Betz cells in the motor cortex were degenerating or absent and were replaced by neuroglia. In the corticospinal tracts there was demyelination at all levels. The diagnosis was amyotrophic lateral sclerosis.

The investigators heard of one middle-aged female patient who had arrived in California about 1946. A few years later, a progressive paralytic disease developed and the patient was said to have died of ALS about 1952. However, she could not be identified well enough to lead to a clinical record.

The incidence of ALS, which is known to be high among the Chamorro population of Guam, appears to be equally high among the Guamanians who emigrated to California during the past few decades. This suggests that a change of environment does not prevent motor system disease among those who may be predisposed.

The results of the present study support the view presented in other reports[3,7] that the ALS which occurs among Guamanians is owing to a genetic mechanism rather than to one which develops only during residence in the Mariana Islands.

All the adults interviewed or examined in the present study had been born on Guam. None could be found who may have been the offspring of the very few Guamanians who emigrated to California 30 or more years ago.

Amyotrophic lateral sclerosis outside the Mariana Islands infrequently appears in familial aggregations. Careful family histories usually do not elicit other cases, but numerous pedigrees have been described in the United States and among at least eleven other nationalities.[3] It has been hypothesized that ALS is due to a genetic mechanism, not only in Guam but elsewhere in the United States and in the other countries as well.[3] It is believed that ALS is due to the inheritance of a dominant trait in which the penetrance is not complete.*

In a few of the patients with ALS on Guam who were part Chamorro and part American or Japanese, the patient's mother had also had amyotrophic lateral sclerosis. In other instances, the mother had not died of ALS although the disease may have been known to occur in her family. These instances also support the hypothesis of dominant inheritance with incomplete penetrance.

The data here reported would appear to emphasize the need to consider ALS as one of the diagnoses when a Chamorro or part-Chamorro has complaint of recent weakness or atrophy, even though the symptoms may be limited to one extremity or even part of the extremity.

On the other hand, it was also noted that several of the Guamanians who were interviewed had severe anxiety over the possibility that they might be developing ALS. For many of them a careful neurological examination with the reassuring statement that the results of examination were within normal limits and that the large majority (90 per cent) of Guamanians were not expected ever to develop this condition, gave relief from this distressing and useless state of anxiety. There is not as yet a means of predicting who will be affected and no way is known for preventing the relentless progress of this disorder even when it is seen in the early stages.

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*"Penetrance," as used here, refers to the percentage of individuals who, when they possess the gene, show any effect from it. Theoretically, if penetrance is complete and the gene is dominant, half of the offspring of an affected heterozygous individual will develop the trait. When an individual can transmit the gene responsible for the trait, yet shows no obvious manifestation of the disorder, it is said that the penetrance of the gene is incomplete.

Abdominal Fascial Transplants

Physiological and Psychological Benefits

C. L. LOWMAN, M.D., Los Angeles

• Even when they cannot restore the ability of a paralyzed patient to walk, fascial transplanting operations to stabilize the trunk, to give firmness to the abdominal wall and to improve the posture can be of great benefit. Well designed and well executed operations can greatly improve respiratory, circulatory and eliminatory function. Often the ability to talk or even to sing is restored. Even the ability to cough effectively can sometimes be a boon.

The rewards in improved physical health and in morale can make the pain and the expense of operation well worth while to the patient.

IN THE MISTAKEN BELIEF that kinetic improvement is the main reason for the operative repair of paralysis of the abdominal wall by fascial transplant, some investigators ask, "Why put a patient to the pain and expense of operation if the lower trunk and legs are so severely damaged that he will probably be unable to walk or work again even if he can stand in braces?"

The answer is that it is hoped by well considered operation to obtain for the patient improved general health and enough trunk stability so that he will be able to use his arms without losing his balance and sit for some hours without fatigue.

Early operative intervention after paralysis—three or four months after the acute attack to obtain greatest benefit—can have beneficial effect on respiratory, circulatory and eliminatory functions. Operation can also be of help even in chronic cases, but in them the difficulty in estimating the tension is increased due to contracture of the intercostals.

RESPIRATORY FACTORS

Often, patients with extensive paralysis have spent a period fighting for life in a respirator. After surviving the psychic trauma induced by the diagnosis of poliomyelitis and the terrifying experience of struggling to live, they have improved enough in vital capacity and tidal air to be rid of mechanical assistance to breathing.

Two elements are involved in their respiratory function: The neuromotor factor, which usually receives the most attention, and the less appreciated skeletal factor which is essential to good function of the muscles of the trunk and extremities.

Integrity of the respiratory muscles (chiefly the diaphragm and the intercostals, with the accessory muscles used in case of excessive demand) is essential to the adequate exchange of gases demanded by all parts of the organism.

Functional efficiency depends on the degree of impairment of the neuromotor connections and on the alignment of the muscles for appropriate function, such as the position of the points of origin in relation to the points of insertion. For maximum function one end of every muscle must be maintained in a fixed position so that the tensile force of contraction will be transmitted to the point of attachment.

Over and above the action of muscles, the structure of the thoracic cage, in the interrelation of its parts—sternum, ribs and spine—creates elastic tension intrinsically. This is due to the sternocostal ligaments in front, the peculiar arrangement of the costovertebral articulations, the shape of ribs and the position they assume in different phases.

This intrinsic balance occurs when normal postural alignment exists. The movement of the ribs is essentially a dynamic factor in respiratory function. Steindler[4] pointed out that expiration is not simply a collapse of the elastic tension to the position of equilibrium. Even in quiet breathing, muscle effort takes place. The shape of the ribs above and below changes during inspiration and the sternum must accommodate by change of position. Steindler said that "the external intercostals contract in inspiration and the internal intercostals are inspiratory only in their intercartilaginous portions."

Consequently, the effectiveness of respiratory function is altered by structural changes of body posture—lying, sitting or standing. Hence posture affects the performance of these muscles.

Increased flattening of the dorsal spine and loss of lumbar curve occurs in patients with extensive paralysis who lie for long periods on their backs. This results in increased obliquity of the ribs, which narrows the spaces between them and decreases the effectiveness of the intercostal muscles by decreasing

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their contractile range; they become adaptively shortened. This occurs most frequently when there is loss of normal thoracopelvic fixation by the abdominal muscles. With that loss, all other upper trunk muscles that use the thorax as a base for their action, then tend to draw the ribs closer together.

This is illustrated by the action of the serrati and pectorals which, in their functional efforts in various positions, have a tendency to tighten the rib cage and hence to induce the contracture of intercostal muscles. The other muscles lying between head, neck, shoulder girdle and chest tend to do the same when they are forced to act as auxiliary respiratory muscles. When so acting, they draw the head toward the chest and the points of origin approach the points of insertion, which diminish their effectiveness.

The increase of obliquity of the ribs decreases their curved spring action and some of the elasticity that assists expiration is lost. The forward position of the shoulder girdle and neck shifts the insertional relationships of the pectorals and serrati, especially in the case of patients in respirators or with other mechanical control of breathing. This sequence is often noted as a cause of diminished effectiveness of the sternocleido muscle.

The change in rib angles also alters the anterior costal margin to which the abdominal muscles attach. With these muscles slackened, even if they are otherwise normal they cannot give maximal respirational function; if paretic or paralyzed, they cannot give stabilization of the rib cage on the pelvis.

In the presence of such weakness and laxity there is decreased resistance to the downward thrust of the diaphragm. With the points of origin and insertion shifted, weakness from the paralysis reduces the effectiveness of the diaphragm and in turn affects vital capacity and tidal air.

The abdominal muscles are the principal expiratory muscles. In action they hold down the lower ribs and narrow the costal arch that is brought about by the rectus, the obliques and the transversalis. There must be a balance between these muscles, the diaphragm and the rib cage. Steindler[5] (citing Duchene[2]) called this a three-cornered equilibrium. He said that the costal arch is the center of this tricornered equilibrium and that good stabilization is necessary to obtain effective performance of the abdominal muscles or the diaphragm, the arch will be depressed by the action of the diaphragm unless fixed by the abdominals. When the abdominal muscles are paralyzed, the wall sags and the abdomen protrudes. The expiratory "backstroke" is lost, which, according to Steindler,[6] adds greatly to the respiratory difficulty.

The procedure of stabilization of the thorax on the pelvis by means of fascial inserts—that is, attaching healthy sections of the abdominal musculature to the pelvis or costal margin in case of a segmental paralysis, or from pelvic rim to opposite rib margin in case of complete loss of abdominal wall integrity —will thus definitely improve intercostal and diaphragmatic function. Proper contractile length of intercostal muscles is restored and origin and insertion are fixed, which brings about more effective respiration and lessens the load on the heart. If this procedure is done with due attention to the maintenance of spinal alignment and the control of trunk balance at all times, the respiratory function will be improved.

When increased obliquity of the ribs occurs, usually there is decided sagging and bulging of the abdomen. The stabilizing operation prevents or reduces the sag, and this, together with postural balance between the thorax and spine, provides a proper resting position for the diaphragm. With the improved relationship of muscular origin and insertion that are thus achieved, the pressure variations between abdominal and thoracic cavities are bettered. A nearly neutral position of the abdominal wall tension gives the best possible function of remaining muscle in aiding costal breathing.

Dr. John Affeldt and some of his co-workers, in personal communication, called attention specifically to the importance of coughing in persons with extensive paralysis. They observed that a rigid abdominal wall is required to obtain compression for the expulsive force of a cough. Fixation of the chest wall to the pelvic base provides this rigidity.

Frequently the patient's vital capacity frequently rises several hundred cubic centimeters soon after fascial transplant. Improved functioning of arm and shoulder girdle and neck musculature usually takes place. If proper spinal alignment is maintained, this gives an improved base of action to the auxiliary muscles of respiration.

CIRCULATORY FACTORS

Compression of the veins in the extremities by the contraction of adjacent muscles and the action of the diaphragm plays a part in return of blood to the heart. Upon inspiration the downward pressure of the diaphragm compresses the abdominal viscera, lymph channels and the great veins. The heart is filled by this pressure gradient extending from the extremities and lower torso into the thoracic chamber. When the abdominal wall is slack, as it is in some cases of paralysis, this order of circulatory assistance is absent. Fascial transplants then not only aid in restoring this action but promote an increase in general body activity which, in turn, acts to improve the general circulation and venous return to the heart.

For years, Bower[1] has emphasized that getting carbon dioxide out of the lungs is as important as getting oxygen into them. With adequate stabilization of the thorax by the transplants, not only is air brought into the lungs with greater facility but improved expiratory action tends to increase the venous flow from the legs into the abdominal cavity, reducing stasis in the legs. This may be noted when a patient is partially immersed in a tank of water as postoperative therapy. The compressive action of the water on the lower trunk and the legs enhances the effectiveness of the transplants. Both circulatory and respiratory elements are influenced.[3] More effective gaseous exchange occurs, which reduces the work of the heart. In the tank, however, the chest should not be submerged.

Structural alignment is essential in the improvement of physiological functioning. Physicians in general, and even some orthopedic surgeons, place altogether too little importance on postural considerations. Good posture often seems to be forgotten as soon as the patient is sitting or walking.

The wheel chairs in general use induce forward tilt of the head and shoulders, increase dorsal curves and slacken the abdominal wall, allowing depression of the rib angles. Besides circulatory stasis in the abdomen and legs incident to the slackened abdominal wall, the chest sags and a let-down of the cervical fascia results. This fascia, continous with the pericardium, might be considered the suspensory ligament of the heart. Lowering of the heart, relaxation of the points of fixation of the diaphragm and the visceral drag in the abdominal cavity may partly neutralize the benefits to be gained by myofascial transplants. Unless these factors are properly considered the results of operation may be less than expected. Preoperative analysis, good operative judgment and technique and attention to details in postoperative care will bring the greatest benefits in fascial transplant operations.

ELIMINATORY INFLUENCES

Excretions through the bowel, genitourinary tract, respiratory system and skin are necessary for homeostasis. After operation the diaphragm can exert more pressure on the intestinal contents. Patients soon find that they have improved defecation and require few if any enemas. Similarly this action aids in emptying the bladder. Often patients who have had trouble voiding have less difficulty after transplant procedures. Increased abdominal pressure and restoration of ability to move the trunk also help overcome the tendency toward calculus deposits and the development of infection in the genitourinary tract which are problems in severely paralyzed persons who lie for long periods without changing position.

The eliminatory function of the skin is improved by immersion in tanks of warm water in which the patients are routinely treated in the postoperative period. The heat and the increased motor activity brought about by therapy of this kind dilate the peripheral capillaries.

Improvement in the ability to cough can be one of the considerable benefits of fascial transplanting, particularly for patients who, before operation, had to have frequent application of mechanical suction to eliminate the mucus from the bronchi. Development of colds in such patients entails risk of atelectasis. In some cases in which atelectasis developed and the patient had to be returned to the hospital for bronchoscopy and another period in the respirator, the increased effectiveness of cough hastened improvement. Many patients who could scarcely speak above a whisper regained their voices after fascial transplanting operations. Some, after repair of a partially defective abdominal wall were able to sing. For one lad, ability to play a trumpet was restored.

The improvement in trunk stability is of primary psychological importance. Ability to sit in comparative comfort and use the hands and arms effectively gives the patient a feeling of accomplishment. Performing many small acts means continuing functional progress with constantly widening horizons.

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CASE REPORTS

Metastatic Carcinoma of the Heart Simulating Bacterial Endocarditis

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WITH THE RECENTLY renewed interest in the diagnosis and in the pathologic changes of neoplastic involvement of the heart it seems of value to review a case in which unusual features necessitated differentiation from bacterial endocarditis. It is well known that one or all of the usual signs of bacterial endocarditis—namely, fever, heart murmur, growth of pathogenic organisms on blood culture and embolic phenomena—are sometimes absent. Conversely, one or several of these symptoms or symptoms like them are sometimes brought about by divers diseases not primarily related to the heart. The following is a case presentation in which the diagnosis of, at least a superimposed, endocarditis was entertained because of fever, cardiac murmurs and enlargement, weakness and pallor. It was decided to treat this suspected, and possibly reversible infection despite the knowledge of the neoplastic background.

REPORT OF A CASE

A 63-year-old white woman was admitted to the hospital in February, 1955, with a painful swelling of the right leg. She had had subtotal hysterectomy in 1940 for "childbirth tears" and cholecystectomy for chronic cholecystitis and cholelithiasis in 1951. At the time of the latter operation, a diagnosis was made of squamous cell carcinoma, grade II, stage 1, of the cervical stump. Radium implants were placed and the lesion regressed. The patient remained well until December, 1954, when she noticed a dry, hacking cough and a slight elevation of temperature. A month later, ascending thrombophlebitis of the right leg necessitated hospitalization. Anticoagulants and Aureomycin were given and the patient was kept in bed with the affected leg elevated. The pain and swelling of the leg disappeared but the cough and the temperature elevation (to 101°F.) persisted. The patient had episodes of precordial distress. palpitation and sweating about the face. Digitalization was carried out and penicillin was administered parenterally in doses of 600,000 units daily. On March 16, 1955, the patient was readmitted with weakness, fever and generalized malaise. She was observed to be pale and weak. A few inspiratory rales were heard at the base of the lungs on both sides. The blood pressure was 118/80 mm. of mercury, the pulse rate 120 and respirations from 26 to 30 per minute. Upon examination of the heart it was noted that there was a predominant sinus rhythm with runs of irregular beats (auricular fibrillation) and a diastolic gallop. The heart was enlarged to the left and for the first time a grade II to-and-fro, coarse murmur was heard along the upper left sternal border. One examiner remarked upon the superficiality and varying intensity of this sound. Except for grade I pitting edema of both legs and residual effect of phlebitis on the right, no other abnormalities were noted.

The hemoglobin content was 9.5 gm. per 100 cc. of blood. Erythrocytes numbered 3.4 million per cu. mm. and leukocytes 10,200 per cu. mm.—83 per cent segmented and 3 per cent banded forms, 2 per cent eosinophils, 8 per cent lymphocytes and 7 per cent monocytes. Three cultures of blood on the initial and three on the second admission were negative for bacterial growth. The result of a serologic test for syphilis was negative. The specific gravity of the urine was 1.014. There was no reaction to tests for albumin and sugar. Upon microscopic examination of the urine a few erythrocytes and leukocytes were seen, as well as fine and coarse granular casts. An electrocardiogram showed right bundle branch block and auricular fibrillation with a moderately rapid rate.

A roentgenogram of the chest on first admission (February 1955) showed a circumscribed density in the right lower lung field and cardiac enlargement. A film taken on the second admission (March 1955) showed a definite increase in the size of the area of density, a new, smaller nodule in the right midlung field and definite increase in the size of the cardiac shadow.

A provisional diagnosis of bacterial endocarditis was made and the patient was given penicillin, 20 million units a day intravenously, and streptomycin, 1 gm. twice a day by intramuscular injection. The treatment was continued for 16 days. The patient then was afebrile but her condition continued to deteriorate and she finally died on April 5, 1955.

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Figure 1.—Anterior surface of the heart showing numerous tumor nodules and fibrinous pericarditis.

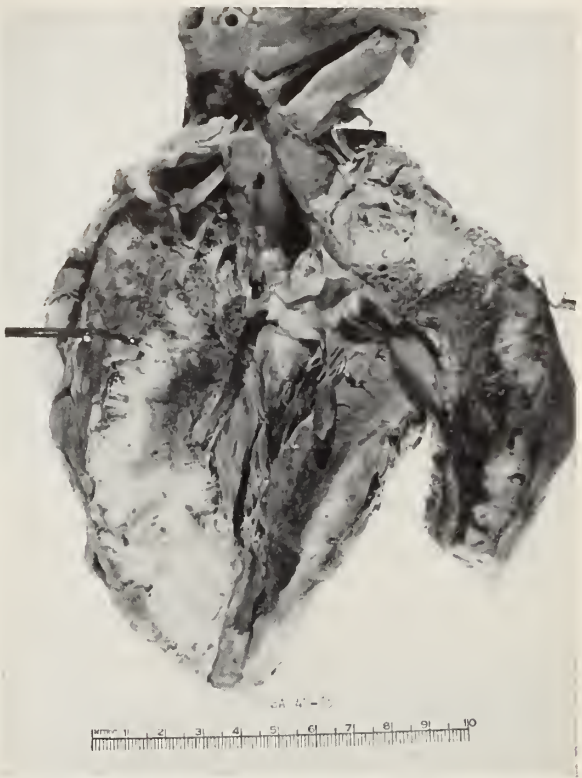

Figure 2.—Left ventricle opened to illustrate massive neoplastic involvement of the myocardium. The aortic valve (superiorly) is uninvolved.

At autopsy the heart weighed 710 grams. It was massively involved by metastatic tumor. The anterior pericardium was infiltrated with tumor and adherent to the anterior surface of the heart (see Figure 1). Scattered tumor nodules bulged beneath the epicardium of the ventricles, and there was extensive subepicardial infiltration at the base. The anterior wall of the right ventricle was largely replaced by tumor measuring as much as 3 cm. in thickness. The tumor extended continuously from the epicardial surface through to the columnae carneae and papillary muscles. A rough tumor surface replaced the endocardium in many areas. There was less extensive infiltration of the interventricular septum and left ventricle. The tumor tissue was firm, pale gray and friable. The aortic valve (as well as the other valves) was free of any involvement (Figure 2).

Scattered within the parenchyma of both lungs were nodules measuring up to 1.5 cm. in diameter. One lobulated tumor 2 cm. in diameter involved a small bronchus in the right lung. A tumor 3 cm. across was present in the dome of the right diaphragm. The peribronchial, bifurcation and paratracheal lymph nodes were involved by tumor. No tumor could be identified in the uterine cervical stump, in the liver or elsewhere below the diaphragm. Other lesions of note were recent ischemic infarcts of the spleen and left kidney, pulmonary hyperemia and edema with acute fibrinous pleurisy.

Microscopically the tumor in all situations was a partially differentiated squamous cell carcinoma.

Whether the malignant disease in this case arose from a primary carcinoma of bronchus or the previous carcinoma of the uterine cervix could not be determined, but in view of the time interval and the absence of abdominal or pelvic tumor, bronchogenic origin seemed more probable.

Metastatic tumors of the heart occur by contiguous or (rarely) lymphatic spread from adjacent or neighboring primary malignant tumors or via the blood stream. The most common primary tumors are those involving the trachea, breast, lung, esophagus, stomach, skin, kidney and pancreas.[3] The two sites of tumors that involve the heart that are diagnosed most frequently clinically are the skin (malignant melanoma) and the bronchus. Burnett and Shimkin[1] pointed out that the reported incidence of secondary neoplasms of the heart observed at autopsy of patients with cancer was from 1 per cent to 11 per cent. They reported an incidence of 18 per cent in 288 such cases and attributed the higher rate to increased awareness of the lesion and the increase in length of life in those afflicted by cancer. Diligence of microscopic search is, of course, a factor.

Most metastatic lesions of the heart cause no symptoms clinically until rather abrupt appearance of progressive signs and symptoms of cardiac disease

in a patient with evidence of widespread tumor and without a history of previous heart involvement leads to diagnosis. The most frequent symptoms are those of congestive failure, pericardial effusions, rhythmic disturbances and syncope.[2] Soft, changing or bizarre murmurs may be extremely difficult to differentiate from pericardial friction rubs, as in the case here reported. Differentiation is especially difficult if the more characteristic "scratching" quality of friction rub is absent and if the rub is louder in one of the several areas of auscultation. Bacterial endocarditis could not be excluded from consideration merely because a culture of blood does not grow organisms or because of the absence of signs of embolization. The history of cervical cancer, the presence of pulmonary nodules and thrombophlebitis all suggested that recurrent cancer was present but did not exclude concurrent valvular infection. Of great interest was the almost unbelievable replacement of the myocardium by tumor. How cardiac function, and especially cardiac output, was maintained as long as it was, even at reduced levels is difficult to imagine.

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Malformation of the Odontoid Process

Report of a Case and Clinical Survey

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NOT UNTIL 1933[10] did reports appear regarding congenital anomalies of the odontoid process of the axis. Since then, 20 cases have been described in 15 publications dealing with three odontoid variants:

1. Complete absence (agenesis or aplasia dentis epistrophei[3,4,6,7,8,9,10,12,13,14,15]).

2. Partial absence (hypoplasia[5,8,11]).

3. Separation or nonfusion of the tip (os odontoideum[1,2,8,11]).

Associated regional malformations have occasionally been observed.[6,9,13] All three variants or degrees of abnormal odontoid growth lead to an unstable atlanto-axial joint with potential repercussion on the medulla oblongata and upper cervical cord. Following is a report of a case of absence of the odontoid process.

REPORT OF A CASE

The patient, an intelligent, physically very active 33-year-old electrician, father of three children, asked for radiologic examination of the odontoid process in July, 1956. He had been told elsewhere that this bone of the spine was either fractured or absent. Films taken previously were at that time on deposit with a court of law.

In 1944 the patient had begun to have pain in the hips. A diagnosis of rheumatoid arthritis was made in an Army hospital, and fever therapy and salicylates were given. In 1946 pain developed also in the back and chest and became so severe at one time that the patient could not get out of bed unaided. In 1948 roentgen therapy was given to the dorsal spine in a Veterans Administration hospital. Pain was relieved for one year. Then pain and stiffness developed in the neck and shoulders. In 1950 another course of roentgen therapy was given to the dorsal spine with less favorable results. In January 1956 he was thrown off a fast moving toboggan in prone position. The violent impact caused excruciating pain in the back and chest, and for five minutes he felt immobilized by the agony. There was no tingling or numbness in the extremities and no nuchal pain. There were no after effects.

In 1953 the patient had received a whiplash injury of the neck in an automobile accident. There was no immediate pain, but a few hours later the neck was stiff and so painful that he had to splint it with his hands. In routine roentgenograms of the cervical spine at that time (without views through the mouth) no abnormality was noted. Within six days the patient was back at work. In connection with court action instituted by the patient, a roentgen study had been made a short time before he sought the roentgen examination mentioned at the beginning of this report. The films, which were held as exhibits by the court were said to show that the odontoid process was missing.

In coming to the authors, the patient sought advice rather than treatment. Two physicians had told him that he needed operative fusion of the first and second cervical vertebrae, since any trivial injury, even a cough or sneeze, might cause serious, possibly fatal damage to the medulla. He also wanted to know whether he had been born without the odontoid process or it had been fractured and absorbed.

Upon examination the patient was observed to be muscular and in good general mental and physical health. All the movements of the neck were slightly limited. The dorsal and lumbar spine was practically fixed in mild lordosis; the patient stooped entirely from the hips. The remaining joints—at the time free from pain—were fully mobile. Results of neurological examination were within normal limits.

Roentgenograms of the cervical spine showed absence of the odontoid process on the appropriate views (Figure 1). With flexion and extension of the head there was abnormal mobility of the body

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Figure 1.—*Left:* Open mouth projection of atlanto-occipital joint. Note empty space above body of axis, normally taken up by odontoid process. *Center:* Lateral view of cervical spine with head in flexion. Note lack of odontoid process, normally projecting into outline of atlas, and anterior displacement of atlas. *Right:* Lateral view of cervical spine, with head extended. Compare with center film and note, besides absence of odontoid process, posterior displacement of atlas.

of the first cervical vertebra in relation to the second. The cervical spine was radiologically normal in all other respects, as were the dorsal and lumbar spine.

The diagnosis was: (1) Radiological evidence of agenesis of the odontoid process and instability of the atlanto-axial joint, without clinical symptoms and signs. (2) Clinical evidence of rheumatoid spondylitis of the spinal column, without radiological signs. (3) Whiplash injury of the neck three years ago, with recovery.

DISCUSSION

The lesion of the second cervical vertebra in the present case was clearly congenital. Absorption of the odontoid fragment after injury is not known to occur and the minuscule stump was typical for agenesis. Although the patient had minor complaints which could be ascribed to rheumatoid arthritis, he was feeling well and fit for work and play. The lack of an odontoid process was not causing disability at the time the patient was observed. His problem was the threat inherent in the congenital malformation. The whiplash injury probably had been of a trivial kind; no dislocation between the first and second cervical vertebrae could be demonstrated except for the instability of the joint on acute flexion and extension of the head. For an evaluation of the relative risks with or without operative fusion it was necessary to find out how patients in similar cases had fared. Table 1 summarizes the record to date.

That the condition was not observed until fairly recently is probably due to both its rarity and the former lack of suitable roentgen techniques. A third factor may be the relatively low incidence of morbidity and mortality associated with this anomaly. Contrary to previous, far more pessimistic views, it has been recently shown that even with fracture of the odontoid process the mortality rate is only 8 per cent.[16]

Trauma to the head and neck with subsequent local disability was, according to the published records, the common but not invariable complaint leading to the diagnosis of odontoid malformation. This is not surprising considering that the majority of the patients were younger than 30 years of age. Automobile accidents were conspicuously rare in the list of precipitating circumstances (only Case 6, Table 1). The local signs and symptoms (pain, stiffness and deformity of the neck) were those of an upper cervical articular derangement, but such phenomena were absent in six cases.[3,4,7,9,11] Dislocation of the atlas on the axis, more often in an anterior direction than posterior or lateral, was observed in 12 instances.[4,5,6,8,10,11,13,14,15] Subluxation was observed in one case. Excessive mobility of the first two cervical vertebrae has been reported.[2,13] It was observed in the present case and is likely to be a universal feature of this condition. Total absence of the odontoid process was the most frequently reported of the three variants or degrees; it was observed in 13 cases. Separation of the odontoid tip —os odontoideum (4 cases)—is a clear demonstration of its earlier developmental stage; the tip is originally laid down as a bone center of the atlas and has failed here to join with the body of the axis. As this fusion normally does not occur before the third or fourth year or even later, one wonders about the morbid significance of os odontoideum in childhood.

Of special interest are the associated regional malformations of the Klippel-Feil type,[6,9] platybasia[9] and thickening of the arch of the atlas.[13] In the first instance reported,[6] there was asymmetry of the axis as well as congenital fixation of the axis body to the bodies of the atlas above and of the third cervical vertebra below. The patient, a 14-year-old girl, died with signs of hemiplegia and generalized unilateral

TABLE 1.—*Summary of Reported Data on 20 Cases of Congenital Abnormalities of the Odontoid Process*

References	Age and Sex	Mechanism of Trauma	Local Symptoms and Signs	Central Nervous System Symptoms and Signs	Radiological Signs	Treatment		Follow-Up
						Conservative	Operative	
Flemming, Hodson 1955	55 M	Fall in dizzy spell 4 months earlier	Pain in shoulders and on neck flexion, not referable to atlanto-axial joint	None	Os odontoideum, ? subluxation atlas on axis	None advised	None advised	None
Ford 1952	17 M	Wrestling and other repeated minor injuries	None	Repeated syncope with vertigo, nystagmus, diplopia, ataxia	Os odontoideum, excess mobility of atlas	Collar	Fusion	Short, satisfactory
Fullenlove 1954	56 M	Hit head against rung of ladder	Posterior cervical pain	None	Absent odontoid	Diathermy six times	None advised	Much improved on discharge
Ivie 1946	23 M	Wrestling	None	Transient weakness and paresthesia of limbs. No sensory loss.	Absent odontoid, dislocation of atlas on axis	Tongue traction cast	None advised	Military duty after 12 weeks
Lombard & LeGenissel 1939	8 M	Slap in face	Fixed torticollis	None	Partially absent odontoid; dislocation, anterior of atlas	None	Fusion	Short, satisfactory
Lombard, Munera, et al. 1945	14 F	Thrown into ditch in car crash	Fixed torticollis and neck pain	None	Absent odontoid, Klippel-Feil C1,2,3, dislocation, anterior of atlas	None	Fusion	Surgical injury to medulla, death, postmortem
Miyakawa 1952	29 M	Age 16: wrestling. Age 19: tumbling. Age 29: head struck beam	None	Transient brachial paralysis, paresthesia	Absent odontoid	None	Refused operation	Well
Nievergelt 1948	28 M	Age 17: fell off bicycle. Age 28: hit by falling log	Neck pain	Transient leftsided weakness, positive Babinski, loss of deep sensation, Horner's syndrome	Absent odontoid; dislocation anterior of atlas	Traction	Refused operation	Short, satisfactory
Nievergelt 1948	7½ F	Fight, rheumatoid arthritis	Limited neck movement	None	Partially absent odontoid; dislocation, anterior of atlas	Traction	None advised	Well after 3 months
Nievergelt 1948	10 M	Fall from mule	Neck fixed in flexion	None	Absent odontoid; dislocation, anterior of atlas	Traction, cast	None advised	Unknown
Nievergelt 1948	41 F	None	Neck pain for 6 years	None	Os odontoideum	None	None advised	Unknown
Raskin 1953	26 F	None	None	None referable to odontoid. Grand mal seizures for 4 years, status epilepticus	Absent odontoid; Klippel-Feil C1,2; platybasia	Medical	None advised	Death, postmortem, tonsillar herniation, malformation of brain
Roberts 1933	20 M	"Bridging" in gymnasium	Neck pain and limited movement	None	Absent odontoid, dislocation, posterior of atlas	Bradford frame, leather collar	Refused operation	Well, one year later

TABLE 1. *(continued)*

References	Age and Sex	Mechanism of Trauma	Local Symptoms and Signs	Central Nervous System Symptoms and Signs	Radiological Signs	Treatment		Follow-Up
						Conservative	Operative	
Sarasin	24 F	None	None	Right sided paresthesia for one month, vertigo and headache, right sensory-motor hemiparesis	Os odontoideum, dislocation, posterior of atlas	None	None advised	Death, two days after x-ray exam.; no post-mortem
Sarasin 1952	55 F	None	None	Pain in right arm, no signs	Partially absent odontoid; osteoarthritis	None	None advised	Unknown
Scannel 1945	23 M	Wrestling	Neck pain and limited movement	Weakness of four limbs for one-half hour	Absent odontoid, abnormal mobility C1, 2	Traction	Refused operation	Discharge from Army
Schultz et al. 1955	29 M	None	None	Quadriparesis with amyotrophy and pyramidal signs	Absent odontoid, dislocation posterior of atlas	None	Laminectomy, no fusion	Improved. At operation: hypertrophy of atlas, adhesive arachnoiditis, constriction of cord
Stiefel 1950	24 F	None	Neck pain	None	Absent odontoid, dislocation, posterior of atlas	None	Refused operation	None
Weiler 1942	14 F	Fall with playmate on top	Neck pain and limited movement	None	Absent odontoid, dislocation, lateral and posterior of atlas	None	Fusion	Short, satisfactory
Weiler 1942	12 F	Unknown	Recurrent dislocation since age of two	None	Absent odontoid, dislocation	None	Planned	Unknown

edema due to a rongeured fragment of the arch of the atlas accidentally driven into the medulla during the operation for fusion. The patient in the other such instance, who also died, showed pronounced platybasia, malformation of the occipital lobes of the brain and congenital fusion of the bodies of atlas and axis—another Klippel-Feil variant. Death in this case was due to tonsillar herniation into the foramen magnum. In neither of those cases could death be ascribed entirely to the odontoid malformation. A third death[11]—also of a patient with os odontoideum—occurred two days after radiographic examination. The patient was a woman 24 years of age. The malformation had produced unilateral paresthesia, vertigo and headaches of one month's duration, with posterior dislocation of the atlas. Autopsy was not done. Thus, no fatality has been recorded in cases of simple odontoid agenesis such as the one herein reported. In another complicated case,[13] thickened posterior arch of the atlas and adhesive arachnoiditis were observed at operation.

What of the neurological features? The patient with central nervous system disorder caused by associated platybasia[9] already has been mentioned. Another case was that of an adolescent boy who from early childhood had had syncopal attacks, followed by transient vertigo, nystagmus, ataxia, and diplopia whenever his neck was twisted in a fight. He had os odontoideum, and abnormal mobility of the atlas was found at an operation for fusion. In a recently reported case[13] the patient had diffuse amyotrophy of the upper and lower limbs and pyramidal tract signs. These were caused, no doubt, by encroachment on the cord. Thickening of the posterior arch of the atlas and diffuse arachnoid adhesions were observed. The clinical features were hardly referable to odontoid agenesis, this finding being incidental. In the rest of the published cases, neurological symptoms and signs were either transient or, in most cases, absent. They occurred without local cervical complaints and could not be correlated with the radiographic demonstration of articular derangement. The symptoms included generalized or brachial weakness of short duration,[7,8,11,12] paresthesia,[4,7,11] transient loss of deep sensation, Babinski's sign, Horner's syndrome,[8] and sensory-motor hemiparesis (the fatal case in the patient with os odontoideum[11]).

Treatment in the reported cases consisted of various forms of traction for pain or dislocation, with added applications of collar or cast in a few cases. Fusion by a tibial bone graft was recommended to ten patients, but was performed only in three[5,6,14] (one such procedure resulting in death[6]). Laminectomy without fusion was successfully performed on the patient with thickened posterior arch of the atlas and adhesive arachnoiditis.[13] The majority of the patients refused an operation which appeared to them to be out of proportion to the subjective complaint, considering the effectiveness of conservative treatment. A few patients had recurrent symptoms with recurrent injuries, but these

were infrequent in each case except that of the boy with syncopal attacks and os odontoideum.[2]

The follow-up of these patients is fragmentary. One must surmise, however, that untoward later developments in the published cases would have found their way into the literature.

CONCLUSION

Congenital absence of the odontoid process, if found as an isolated malformation, appears to be a far less serious disability than one might expect. Although an atlas unsupported by its pivotal peg is apt to suggest inevitable catastrophe, experience shows that even with dislocation of this unstable joint the damage to the central nervous system is rare, minimal and reversible. The presence of os odontoideum may be more hazardous. Where, with either condition, repeated dislocations or other complications take place, fusion is advisable—but for orthopedic rather than for neurological reasons—for it is well known that in fracture dislocations of the first and second cervical vertebrae, the medulla is principally threatened by the displaced odontoid peg. Its absence, as it were, compensates for the greater instability it confers on the atlanto-axial joint by increased safety of the medulla. It appears from radiological observation that subluxation occurs in these cases with every flexion or extension of the head. Yet for the patient these movements remain symptomless. One must, therefore, assume that the medulla is not being encroached upon by these excursions of the atlas. Many cases, in fact, may remain undetected. Naturally, each patient will have to be advised according to the individual features of his case.

In the case herein reported the malformation was discovered more or less accidentally, and it cannot be certainly concluded that the patient ever in the 33 years of his unprotected life had had symptoms referable to this joint. The necessity for operative fusion was, therefore, not stressed, but he was warned not to engage in such rough activities as tobogganning and high diving.

SUMMARY

Absence and other congenital malformations of the odontoid process of the axis are rare, and diagnosis of the condition is probably even less frequent. An unstable atlanto-axial joint would appear to be a likelihood, but serious complications seem to be much less common than might be expected.

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California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

One Year Older

LAST YEAR AT THIS TIME, comment was made on the completion of a full century of existence of the California Medical Association and its service to the public. On May 1, just past, the C.M.A. added one more birthday in closing up its 1957 Annual Session.

While this year's session did not set records for attendance it was far from a commonplace meeting.

More than one hundred scientific papers were presented; there were 130 technical and scientific exhibits. Demand for meeting rooms exceeded anything ever seen before, and the House of Delegates pondered one of the longest lists of resolutions ever presented.

New business presented to the House of Delegates included 43 resolutions, three By-Law amendments and one Constitutional amendment. The last-named must lie on the table for one year before being acted upon.

Indicative of the statewide interest in several current topics was the overlapping of resolutions on the same subject. For instance, four resolutions were brought in on the subject of medical education and hospital accreditation. Four more centered around professional liability insurance and its ramifications. Another three referred to the doctor-draft law and the maintenance of advisory committees to Selective Service for the orderly induction of physicians who fall within the scope of the doctor-draft.

The House also turned over to the Council a series of resolutions proposing new programs or departures from earlier established policies.

On the doctor-draft law, the House of Delegates voted its policy as being "vigorously opposed" to the extension of the law beyond June 30 of this year. At the same time, it voted to urge that, should physicians still be destined for induction into the armed forces beyond the age limits placed on common citizens, the advisory committee to Selective Service should be maintained. Such committees, it was pointed out, could provide an orderly system for calling up physicians and other "specialists" and could, simultaneously, safeguard the civilian population against raids on professional personnel which could be disastrous to communities.

In the field of professional liability, the House voted favorably on a substitute resolution which combined the proposals made in four separate items introduced by authors in various parts of the state. The substitute resolution found benefits to the public, the legal profession and the medical profession in the creation of panels of expert physician witnesses whose services could be called upon in personal injury lawsuits. At the same time, it urged the extension of pre-trial procedures which have been adopted in some areas and have been found extremely helpful in clearing clogged court calendars.

Hospital administrative problems came in for considerable discussion, and decisions of the House of Delegates called for a reevaluation of existing functions of the Joint Commission on Accreditation of Hospitals, the setting by local determination of hospital staff meeting requirements and the retention on approved training lists of hospitals which might not meet their house staff quotas but which continue to maintain adequate training standards. The House of Delegates also called for the privacy of hospital staff records, for new standards for the inspection of hospitals and for the establishment of a statewide hospital accreditation committee which could counsel with individual hospital staffs or county medical societies in the interest of securing higher hospital standards.

The House of Delegates approved a report of a special committee formed a year ago to study the

practice of medicine by full-time faculty members of medical schools. The report gave a blueprint for controlling such private practice and for cooperation between county medical societies and medical schools in matters of public information releases.

In the field of internal administration and C.M.A. policy, the House took several actions calling for long-term policies and programs. It instructed the Council to consider reactivating the Committee on the Unlawful Practice of Medicine as a means of suppressing illegal practices of various kinds. It instructed the Council to develop personnel and a department to represent medicine in negotiations for the furnishing of medical care to large groups of people. It called for public disclosure of the actual proportion of the proceeds of personal injury judgments which accrue to the plaintiff, and it referred to the Council resolutions calling for the study of a "more practical nurses' training program" and for further study on the question of utilizing graduates of foreign medical schools.

In the area of public relations the House voted favorably on a resolution asking for the censure of a national medical organization whose spokesman "has recently come to California and made unfounded, detrimental, public utterances which tend to subvert the modern, public-spirited programs of the C.M.A." The House also went on record as urging continued A.M.A. efforts to secure passage of the Jenkins-Keogh bills to allow income deductions, for tax purposes, for the establishment of individual retirement programs by the self-employed.

The budget approved by the House of Delegates for the 1957-1958 fiscal year included an item of $147,000 as a contribution to the American Medical Education Foundation. This is calculated at the rate of $10 per active member of the Association and, in accordance with the decision of an earlier House of Delegates, 80 per cent of the total will be earmarked for the three medical schools in California which are not primarily tax-supported. The balance goes to the general fund of the A.M.E.F.

All these and all the other actions of the House of Delegates are printed on another page of this issue. C.M.A. members would do well to read the resolutions in their entirety and thus gain full knowledge of the specific actions by their representatives in the House of Delegates.

In the elections held the final day of the House of Delegates meeting, Doctor Francis E. West, San Diego orthopedist and a member of the Council, was unanimously elected president-elect of the California Medical Association. His predecessor, Doctor Frank A. MacDonald, Sacramento surgeon, was inducted into office as president, and the Speaker and Vice-Speaker of the House of Delegates, Doctors James C. Doyle of Beverly Hills and J. Norman O'Neill of Los Angeles, were reelected to these posts. Full election returns are shown in this issue as a part of the digest of House of Delegates actions.

In interest, if not in size, the 1957 Annual Session can certainly be classed as an excellent meeting. It not only presented a scientific program of merit but, as with all such sessions, it pointed out the areas where further improvement may be achieved. As a starter on the second century of C.M.A. service, it provided a good example for future emulation.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Francis E. West, M.D.

OUR NEW PRESIDENT-ELECT, Dr. Francis E. West, was born in Los Angeles on January 31, 1907. He graduated from Loyola High School in Los Angeles, attended Loyola University in Los Angeles for three years, then Stanford University for one year. He entered medical school at the University of Southern California and was in attendance there from 1928 to 1930 when he received his A.B. degree. He transferred his medical education to the University of California at that time and received his degree in medicine in 1933 from that institution.

His internship in surgery was served at the University of California from 1932 to 1933. He served as a resident in industrial and general surgery at the South San Francisco Hospital from 1933 to 1935, then was a resident in orthopedic surgery at the University of California Childrens Hospital Division, 1935 to 1937, and an instructor in orthopedic surgery at the University of Michigan, Ann Arbor, from 1937 to 1938. From 1938 to 1941 he was associated with Doctors LeRoy Abbott and Frederic C. Bost in San Francisco. Dr. West established his practice in orthopedic surgery in San Diego in 1941. He served in the military service from June 1943 until June 1946; he was discharged as a lieutenant colonel. In his army service Dr. West had charge of the orthopedic section at Gardner General Hospital in Chicago, and was in the orthopedic section at Percy Jones General Hospital in Battle Creek, Michigan.

At present Dr. West is serving as consultant orthopedic surgeon at the U. S. Naval Hospital in San Diego. He is the Southern California area consultant in Orthopedics for the Veterans Administration and is consultant to the Regional Medical Office of the Veterans Administration in San Diego.

The new president-elect is a member of the Pa-

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cific Coast Surgical Society, the American College of Surgeons, the Western Orthopaedic Association, the American Orthopaedic Association, the American Academy of Orthopaedic Surgeons. He is a diplomate of the American Board of Orthopaedic Surgeons, 1942.

Dr. West was president of the San Diego County Medical Society in 1952. He has been a member of the Council of the California Medical Association since 1950, and has served on the C.P.S. Study Committee for two years; was chairman of the State Medical Services Committee and chairman of the Commission on Public Health and Public Agencies for the California Medical Association.

In the past he has held appointments on the Advisory Committee of the Crippled Children Services for the Public Health Department, on the Advisory Committee for the Prophylaxis of Poliomyelitis, and on the Advisory Committee for the Morbidity Research program for the State Health Department.

Dr. West is chief of the orthopedic section at Mercy Hospital in San Diego and chief of the orthopedic section at the San Diego County Hospital.

Dr. West married Marion Jenkins of Pasadena in 1936 and they have three children. Marcia, 18, Molly, 15, and Peter, 14.

It is readily understandable in light of these accomplishments and this background that Dr. Francis West should become President-Elect of the California Medical Association.

SAM J. MCCLENDON, M.D.

In Memoriam

ANDERSON, WALTER MARIUS. Died in Lompoc, April 10, 1957, aged 53. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1929. Licensed in California in 1929. Doctor Anderson was a member of the Santa Barbara County Medical Society.

✤

CERF, ALVIN EDGAR. Died April 21, 1957, aged 76. Graduate of the College of Physicians and Surgeons, San Francisco, 1904. Licensed in California in 1905. Doctor Cerf was a member of the San Francisco Medical Society.

✤

EATON, WILLIAM HAMMOND. Died in Bakersfield, April 11, 1957, aged 80. Graduate of the State University of Iowa College of Medicine, Iowa City, 1902. Licensed in California in 1919. Doctor Eaton was a retired member of the Kern County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

GUTTMAN, EUGEN. Died March 10, 1957, aged 71. Graduate of Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Germany. Licensed in California in 1941. Doctor Guttman was a member of the Los Angeles County Medical Association.

✤

HOLLANDER, JOHN DAVID. Died in Ripon, April 30, 1957, aged 42, of heart disease. Graduate of the Chicago Medical School, Illinois, 1943. Licensed in California in 1950. Doctor Hollander was a member of the Stanislaus County Medical Society.

✤

MCNAMARA, THADDEUS MARIA, JR. Died in Redwood City May 2, 1957, aged 47. Graduate of Washington University School of Medicine, St. Louis, 1936. Licensed in California in 1936. Doctor McNamara was a member of the Santa Clara County Medical Society.

✤

NORRIS, MAURICE N. Died April 13, 1957, aged 62. Graduate of the University of Minnesota Medical School, Minneapolis, 1922. Licensed in California in 1932. Doctor Norris was a member of the Los Angeles County Medical Association.

✤

PETTER, REGINALD S. Died in Santa Monica, April 5, 1957, aged 78. Graduate of the University of Southern California School of Medicine, Los Angeles, 1902. Licensed in California in 1902. Doctor Petter was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

SEWALL, EDWARD CECIL. Died in Palo Alto, April 10, 1957, aged 81. Graduate of Cooper Medical College, San Francisco, 1902. Licensed in California in 1902. Doctor Sewall was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

WARMER, CHARLES ANDREW. Died April 9, 1957, aged 81. Graduate of the University of Michigan Medical School, Ann Arbor, 1903. Licensed in California in 1908. Doctor Warmer was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

Transactions of the House of Delegates

Los Angeles, April 28 to May 1, 1957

As was done last year, this report shows the actual decisions of the 1957 House of Delegates of the California Medical Association, without including all the discussions which took place. This reporting is done in lieu of reporting the entire transcript of the sessions of the House of Delegates.

The report given here lists the actions of the House of Delegates under two headings: (1) Resolutions adopted as introduced or as amended, and (2) resolutions referred to the Council of the Association. In each instance, pertinent comments by the appropriate reference committee are appended parenthetically so that the reasoning of the reference committee may be understood.

A complete transcript of the sessions of the 1957 House of Delegates, prepared by a court reporter, is on file in the office of the Association and is available for the inspection of any member.

* * *

RESOLUTIONS ADOPTED

RESOLUTION No. 1

Introduced by: Donald D. Lum.
Representing: The Council.
Subject: County Society Charter.

Whereas, The Shasta County Medical Society has for some years admitted to membership those physicians applying from Trinity County, where there is no chartered county medical society; and

Whereas, It is desirable that physicians in Trinity County be recognized as to their own geographical area; now, therefore, be it

Resolved, That the charter heretofore issued to the Shasta County Medical Society be returned and a new charter be issued by this House of Delegates in the name of the Shasta-Trinity County Medical Society.

* * *

RESOLUTION No. 2

Introduced by: J. M. de los Reyes.
Representing: Los Angeles County Medical Association.
Subject: Constitution Study Committee.

Whereas, The Constitution of the California Medical Association does not adequately provide proper membership representation; and

Whereas, In order to eliminate this inequity, it would be necessary to amend the Constitution of the California Medical Association; and

Whereas, Certain amendments of the Constitution have been proposed which will require necessary study and possible revision; now, therefore, be it

Resolved, That this House of Delegates authorize the Speaker of the House to create and appoint a Study Committee, composed of members from all Councilor Districts, for the purpose of amending the Constitution of the C.M.A. to provide for adequate representation for all Councilor Districts, on the State Council, in accordance with physician membership; and to report its findings and recommendations to the House of Delegates in the form of adequate Constitutional Amendments at its next Annual Session; and be it further

Resolved, That this Study Committee reevaluate the possible necessity for continued agreement on the geographic rotation of the election of officers and, if necessary, reduce this agreement to a written formula for presentation to the House of Delegates; and that a study be made regarding the desirability of reduction of the size of the House of Delegates, but maintaining the principle of proportionate representation; and that an additional study be made regarding a method of selecting the Delegates and Alternates to the American Medical Association on a fair and equitable basis combining the principles of geographic and proportional representation.

* * *

RESOLUTION No. 3

Introduced by: D. M. Campbell (Bender, author).
Representing: San Francisco Medical Society.
Subject: Doctor Draft Law.

Whereas, Congress enacted the Doctor-Draft Law in 1950 with the specific intent to induct involuntarily into the Armed Forces physicians, dentists and "allied specialists" to fulfill the urgent need of such personnel during mobilization for the Korean war, and subsequently extended the law until June 30, 1957, well beyond the duration of that emergency; and

Whereas, The Doctor-Draft Law is selective, discriminatory legislation, imposing more liability for compulsory military service on one class of citizens than on other classes, contrary to basic principles

of democratic representative government, a dangerous precedent justifiable only in the national interest during a crisis; and

WHEREAS, The Doctor-Draft Law, operative throughout that emergency, and far beyond, has accomplished adequately the purpose for which it was created; and

WHEREAS, The professions affected not only have accepted with good grace the inequitable class legislation to which the Doctor-Draft Law subjects them, but also have participated actively in its administration, as a temporary measure to assure the "health, safety and interest" of the nation in time of war; and

WHEREAS, It is the duty of the Department of Defense to make efficient use of such professional personnel so that the minimum effective doctor-to-troop ratio may be maintained, and to make a military career attractive by means of incentive, such as opportunities for additional training, recognition of ability and zeal by improvement in rank and remuneration, and reduction of administrative duties, rather than to rely on inequitable conscription in time of peace, to the detriment of essential health services for the civilian population; now, therefore, be it

Resolved, That this House of Delegates of the California Medical Association go on record as vigorously opposed to any continuation of the Doctor-Draft Law, in whole or in part, or in principle, beyond the expiration date of June 30, 1957, thus liberating from unequal compulsion members of the professions concerned and restoring to them, in training and in practice, the rights and privileges enjoyed by other professions, at the same time protecting the civilian population against undue drain on essential health services by the military; and be it further

Resolved, That the California Delegation to the Annual Meeting of the House of Delegates of the American Medical Association June 3-7, 1957, be advised of this action and urged to initiate and to strive to enact an identical resolution in that body; and be it further

Resolved, That the national organizations of dentists and "allied specialists" be urged to take similar action without delay; and be it further

Resolved, That a copy of this Resolution be sent immediately to National Headquarters American Medical Association, not only recording the opposition of the California Medical Association to continuation of the doctor-draft, but also emphasizing the significance and imminence of legislation toward that end, probably before the House of Delegates of the American Medical Association is in convention and able to act on this subject.

RESOLUTION No. 4

Introduced by: D. M. Campbell (Bender, author).
Representing: San Francisco Medical Society.
Subject: Advisory Committees.

WHEREAS, The Doctor-Draft Law will expire June 30, 1957; and

WHEREAS, This House of Delegates is on record opposing any continuation of the doctor-draft; and

WHEREAS, There are forces intent on prolonging the inequitable compulsory induction of physicians, dentists and "allied specialists" into military service, even though the war-time mobilization which justified the enactment of the Doctor-Draft Law no longer exists; and

WHEREAS, The only means of assuring necessary health services for the civilian population and of providing the sole representation members of the professions involved have had under the Doctor-Draft Law, is the system of Advisory Committees; now, therefore, be it

Resolved, That, should Congress in its wisdom consider seriously prolongation of discriminatory class legislation as exemplified by the Doctor-Draft Law, in whole or in part, or in principle, then the current system of Advisory Committees, National, State and Local, must be continued; and be it further

Resolved, That the California Delegation to the Annual Meeting of the House of Delegates of the American Medical Association, June 3-7, 1957, be advised of this action and urged to initiate and to strive to enact an identical resolution in that body; and be it further

Resolved, That the national organizations of dentists and "allied specialists" be urged to take similar action without delay; and be it further

Resolved, That a copy of this Resolution be sent immediately to National Headquarters, American Medical Association, not only recording the insistence of the California Medical Association that the Advisory Committee system be provided for in any continuation of the doctor-draft, but also emphasizing the significance and imminence of such legislation, probably before the House of Delegates of the American Medical Association is in convention and able to act on this subject.

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RESOLUTION No. 6

Introduced by: D. M. Campbell (Fenlon, author).
Representing: San Francisco Medical Society.
Subject: Inspection of Training Programs.

WHEREAS, The Stover Committee studied and gave an excellent report on the Joint Commission on Ac-

creditation to the A.M.A. at the June, 1956, meeting; and

WHEREAS, They recommended that the A.M.A. should be the only organization concerned with the accreditation of intern and residency programs through the Council on Medical Education and Hospitals; and

WHEREAS, The A.M.A. Council on Medical Education and Hospitals is now wholly responsible for this procedure; and

WHEREAS, The use in the past of untrained personnel has resulted in poor and delayed inspection and the subsequent approval or disapproval, thereby jeopardizing the care of the patient in that community; now, therefore, be it

Resolved, That the C.M.A. delegation to the A.M.A. be instructed to press for the following:

1. That the A.M.A. Council on Medical Education and Hospitals be directed immediately to study ways and means of providing inspection of training programs in the individual specialties by members of that specialty, who would be more keenly critical of the true value of these programs than the personnel previously employed.

2. That a plan be suggested to them that the United States be divided into regional areas whereby specialists in the four major fields (surgery, obstetrics, medicine and pediatrics) may accredit their individual specialties using a rotating system so no one area will be inspected by local surveyors.

* * *

RESOLUTION No. 7

Introduced by: D. M. Campbell (Aggeler, author).
Representing: San Francisco Medical Society.
Subject: A.M.A. Council on Medical Education.

WHEREAS, The function of the Council on Medical Education and Hospitals of the A.M.A. is to insure compliance with proper standards of postgraduate medical education; and

WHEREAS, Some private hospitals, as well as university hospitals and those supported by industry and various government agencies are capable of conducting sound postgraduate training programs; and

WHEREAS, The conduct of a postgraduate training program in private hospitals contributes to high standards of medical practice in the hospitals and in the community and thus results in the greatest benefit to the patient; and

WHEREAS, Postgraduate medical education in a private hospital can be designed to fulfill the needs of certain individuals who desire a broad clinical training in preparation for private practice in a more satisfactory manner than training in any other type of hospital; and

WHEREAS, Neighboring hospitals could work out a satisfactory two or three year rotating residency program which would be valuable to the trainee and meet all accreditation standards; now, therefore, be it

Resolved, That the A.M.A. Council on Medical Education and Hospitals

1. Publish specific and detailed requirements for accreditation of training programs in individual specialties in private hospitals.

2. Assist in integrating training in several neighboring hospitals which singly might be unable to fulfill the necessary requirements for accreditation.

3. Recommend to university hospitals that they cooperate in affiliating with nearby private hospitals in planning rotating residencies.

4. Delay, except in aggravated instances, the withdrawal of approval of a training program for a reasonable period of time, thereby permitting the correction of deficiencies and avoiding the harmful effect upon training programs and hospital operations incurred by abrupt withdrawal.

5. Not disallow a training program because it has not been filled for any specified period if the existing teaching facilities have remained unchanged.

* * *

RESOLUTION No. 9

Introduced by: D. M. Campbell (Cox, author).
Representing: San Francisco Medical Society.
Subject: Negotiations on Medical Care.

WHEREAS, There is an increasing number of agencies which purport to furnish or arrange for medical care (including the OASI, the various State and Federal agencies, industrial groups, unions and management); and

WHEREAS, The continued availability of medical care of good quality is in the prime interest of the public; now, therefore, be it

Resolved, That the Council of the California Medical Association develop a department with adequate staff whose duty it shall be to represent the organized medical profession in negotiations with representatives of any and all groups which are designed to provide or control the furnishing of medical care to private citizens in this State."

(Comment of Reference Committee No. 3: "Your committee is in complete accord with the objectives of this resolution but believes it is an administrative function and therefore should be amended . . ." [to read as above . . . original resolution did not mention the Council.])

RESOLUTION No. 10

Introduced by: D. M. Campbell (Gibbons, author).
Representing: San Francisco Medical Society.
Subject: Unlawful Practice.

WHEREAS, There are known violators of the lawful practice of medicine among the members of our profession and among others as well; and

WHEREAS, For the protection of the public and in the policing of our profession violators must not be allowed to continue such activity: and

WHEREAS, There is a provision in the Business and Professions Code of the State of California for the issuing of "an injunction or other appropriate order restraining such conduct": now, therefore, be it

Resolved, That the Council of the C.M.A. be requested to give serious consideration to the advisability of providing sufficient funds to activate the Committee on Unlawful Practice to the end of eliminating unlawful medical practice.

* * *

RESOLUTION No. 11

Introduced by: D. M. Campbell (Musser, author).
Representing: San Francisco Medical Society.
Subject: Physicians' Benevolence Fund, Inc.

WHEREAS, A new corporation has been established called the Physicians' Benevolence Fund, Inc. to administer the duties under Section 6 of Article IV of the Constitution of the California Medical Association: and

WHEREAS, The 1956 House of Delegates passed a unanimous resolution stating that "at least $1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund, Inc., a corporation, and shall be used for the purpose as set forth in that corporation's Articles and By-Laws"; and

WHEREAS, The Physicians' Benevolence Fund started 1956 with $77,840.63 in assets, and income for the year totaled $19,746.65. Disbursements totaled $8,910, including $6,000 to the Los Angeles County Physicians' Aid Association, and only $2,910 in benevolence to individuals; and

WHEREAS, Lack of knowledge of the availability of this fund for needy physicians and their families may account for the relatively small total disbursement to individuals; now, therefore, be it

Resolved, That the administrators of the Physicians' Benevolence Fund be directed to publicize this fund by communication with each county medical society in the State of California, which counties in turn would set up county benevolence committees.

RESOLUTION No. 12

Introduced by: D. M. Campbell.
Representing: San Francisco Medical Society.
Subject: C.P.S. Billing.

WHEREAS, Much time and labor is spent in doctors' offices completing billing forms for C.P.S.; and

WHEREAS, Modernized billing procedures could reduce this work and thereby realize a great saving; and

WHEREAS, This secretarial expense rendered by physicians for C.P.S. amounts to approximately $60,000 per year; and

WHEREAS, C.P.S. billing could be facilitated and this expense to doctors eliminated by the use of stencil membership cards, such stencils to be printed directly on the doctor's own billhead, thereby eliminating the necessity of copying unit and group numbers and all the other details required by C.P.S.; and

WHEREAS, Such a modernization of billing would be of benefit both to physicians and C.P.S.; now therefore, be it

Resolved, That the C.P.S. Board of Trustees be requested to investigate the cost of setting up a procedure whereby stencil membership cards could be utilized by members, to be printed on doctors' individual bills and report its findings of the cost and savings of such a change both to C.P.S. and physicians to the Council of the C.M.A. during the coming year.

* * *

RESOLUTION No. 13

Introduced by: J. W. Rovane.
Representing: Eleventh District.
Subject: Veterans Hospitals.

WHEREAS, There is periodic discussion both by the general public and by some governmental agencies of the need for additional Veterans Hospitals; and

WHEREAS, It is an acknowledged fact that the number of beds available in present Veterans Hospitals are ample to take care of veterans with service-connected disabilities; and

WHEREAS, It is a known fact that temporary shortages of beds in Veterans Hospitals are caused by the utilization of these facilities in connection with nonservice-connected disabilities; now, therefore, be it

Resolved, That the California Medical Association go on record as opposing the establishment of additional Veterans Hospitals except in cases where a demonstrated need exists to take care of veterans with service-connected disabilities; and be it further

Resolved, That this House of Delegates request its Delegation to the American Medical Association to introduce a similar resolution at the next meeting of the American Medical Association; and be it further

Resolved, That this action be transmitted to the California State Chamber of Commerce.

* * *

RESOLUTION No. 14

Introduced by: Burt L. Davis.

Representing: Santa Clara County Medical Society.

Subject: Information Regarding Fees in Personal Injury Cases.

WHEREAS, It has long been common court practice to require information pertaining to the actual costs of injuries to be made public as matters of court record in personal injury cases; and

WHEREAS, Publicity is given to all costs and all fees in certain other types of cases, for instance in the matter of estates, etc.; and

WHEREAS, The joint application of these principles in cases involving personal injuries will better serve the public interest and form good public policy by making a public appraisal of the damages allegedly sustained by the victims; now, therefore, be it

Resolved, That this House of Delegates of the California Medical Association instructs the Council of the California Medical Association and the committees interested in these matters to encourage the introduction of appropriate measures in the California State Legislature, and other public bodies, to the end that uniform rules may be sought in these matters.

* * *

RESOLUTION No. 15

Introduced by: Grant Ellis.

Representing: Alameda-Contra Costa Medical Association.

Subject: Statewide Hospital Accreditation Board.

WHEREAS, The establishment and maintaining of high standards of medical care in hospitals has traditionally and effectively been the function of the medical doctors practicing in each hospital under their staff organization; and

WHEREAS, The establishment, maintenance and supervision of standards of medical practice in hospitals by any national group geographically far removed from individual hospitals has proven to be unwieldy, inefficient and ineffective in many instances, because of wide variety in local custom and local needs; now, therefore, be it

Resolved, That the Council of the California Medical Association study the advisability of establishing a statewide Hospital Accreditation Board which shall counsel, guide and assist local county medical societies and hospital staffs in the establishment, maintenance and supervision of good standards in hospitals on a local basis; and be it further

Resolved, That the national standardization and accreditation program be considered by the California Medical Association to be advisory to the state accreditation program established pursuant to this resolution.

(Action of Reference Committee No. 3: The reference committee amended the first "Resolved" to read as shown above. Originally, the resolution did not provide for Council study of the subject.)

* * *

RESOLUTION No. 16

Introduced by: Grant Ellis.

Representing: Alameda-Contra Costa Medical Association.

Subject: Doctors Serving on Boards of Trustees.

WHEREAS, Doctors of medicine have close and intimate knowledge of the workings of hospitals; and

WHEREAS, Hospital Boards of Trustees or Directors can be well served by a close link between the Medical Staff and such administrative body; and

WHEREAS, The best interests of the patient can be served only by a close liaison between the business administration and the medical practice carried on in the hospital: now, therefore, be it

Resolved, That it is the policy of the California Medical Association to counsel that whenever it is desirable that medical doctors serve on Boards of Directors, Boards of Trustees or other administrative bodies which govern hospitals.

* * *

RESOLUTION No. 17

Introduced by: Grant Ellis.

Representing: Alameda-Contra Costa Medical Association.

Subject: Confidential Nature of Hospital Staff Minutes.

WHEREAS, Questions have been raised in various parts of California concerning whether or not directors of district hospitals legally possess or should possess the right to review the minutes of Medical Staff meetings and the activities of Medical Staff committees; now, therefore, be it

Resolved, That the California Medical Association state as its official policy that it is in opposition to any proposal which would compromise the privacy, in hospitals, of Medical Staff minutes and Medical Staff committee activities that bear upon the physician-patient relationship: and be it further

Resolved, That the California Medical Association communicate to the American Hospital Association, to the California Hospital Association, to the joint Commission on Accreditation of Hospitals, and to the American Medical Association its policy in this regard; and be it further

Resolved, That the California Medical Association lend moral and other necessary assistance to local medical hospital staffs and medical county societies when confronted with threats of this nature.

* * *

RESOLUTION No. 18

Introduced by: Grant Ellis.
Representing: Alameda-Contra Costa Medical Association.
Subject: Postponement of Income Tax Payments.

Resolved, That the California Medical Association declare itself in favor of the U. S. House of Representatives Resolutions 9 and 10 permitting postponement of payment of income tax on certain sums earned by self-employed persons; and be it further

Resolved, That the California Medical Association does urge the American Medical Association to continue its strenuous efforts toward the passage of this or similar legislation.

* * *

RESOLUTION No. 19

Introduced by: Thomas N. Foster.
Representing: California Physicians' Service.
Subject: New Code of By-Laws for C.P.S.

Resolved, That the existing by-laws of California Physicians' Service are hereby repealed; and be it further

Resolved, That the Code of By-Laws of California Physicians' Service attached hereto be and the same is hereby adopted as and for the Code of By-Laws governing the affairs of California Physicians' Service.

(Comment by C.P.S. Reference Committee: "The Committee has reviewed the proposed by-laws and feels that this by-laws revision makes no vital changes in the C.P.S. function, but is in effect a bringing up to date of the by-laws to correspond with current functioning of C.P.S. The committee feels that the proposed new by-laws are adequate as presented for adoption.

"The feeling has been expressed by some delegates that they would desire time to look the new by-laws over. The committee feels that the House should decide that matter, but that there would be no great harm done if the House decides to table this Resolution for another year.

"With this explanation, the Committee recommends that the Resolution as presented *do pass.*")

RESOLUTION No. 20

Introduced by: Charles E. Grayson.
Representing: Eleventh District.
Subject: Compulsory Hospital Staff Attendance.

WHEREAS, The objections to the requirements of the Joint Commission on Accreditation of Hospitals were completely documented and detailed and 17 conclusions in the Stover Commission Report to the House of Delegates of the A.M.A. in June 1956 with the complete approval and support of the A.M.A.; and

WHEREAS, The Joint Commission on Accreditation of Hospitals saw fit not to accept the recommendations as detailed in the Stover Report, referring particularly to recommendation No. 6 which reads: "Staff meetings required by the Joint Commission are acceptable, but attendance requirements should be set up locally and not by the Commissions."; now, therefore, be it

Resolved, That the Delegates from the C.M.A. to the A.M.A. be instructed to introduce a resolution reaffirming the position already established by the A.M.A. through its adoption of the Stover Report in reference to recommendation No. 6; and be it further

Resolved, That the A.M.A. formally request that the Joint Commission on Accreditation of Hospitals revise its standards regarding active staff attendance requirements to conform with the previous recommendations of the Stover Committee Report.

* * *

RESOLUTION No. 21

Introduced by: Frederic P. Shidler.
Representing: San Mateo County Medical Society.
Subject: Hospital Accreditation.

WHEREAS, Periodic examinations of hospital facilities throughout the United States of America for the protection of the public health have been proved to be a force for good by the American College of Surgeons, and more lately by the Joint Commission of Accreditation of Hospitals; and

WHEREAS, The public has demonstrated its interest in obtaining such accreditation for its various local hospitals to provide the best of medical facilities for the sick; and

WHEREAS, The public through its hospital governing boards considers accreditation also a mark of distinction to be sought; and

WHEREAS, Certain health insurance companies have declared that their policies are in force only if their subscribers are treated in accredited hospitals; and

WHEREAS, It is evident that the Joint Commission of Accreditation of Hospitals cannot thoroughly examine all of the hospitals which seek accreditation; now, therefore, be it

Resolved, That the California Medical Association display leadership by encouraging a meeting of the Joint Commission for Hospital Accreditation and the Executive Committee of the Advisory Board for Medical Specialties in order to accurately appraise each hospital as to physical facilities and medical staff performance to the effect:

1. That examining teams be drawn from one or more of these boards, from all over the country;

2. That hospital examinations include not only present examining methods, but that examiners also spend at least a half day in hospital surgeries, spend some time in the obstetrical suite and newborn nursery, spend a half day in the hospital laboratories, and attend at least once each of the organized staff conferences and the general staff meeting:

3. That no remuneration will be supplied for these examining teams by the Joint Commission of Hospital Accreditation; and be it further

Resolved, That the California Medical Association remind the entire profession that it must meet at once the responsibilities of hospital standards or surrender them first to hospital administrators, and thence to other lay organizations who probably will attempt to define the hospital activity of the medical profession by state or national legislative action.

* * *

RESOLUTION No. 23

Introduced by: Howard G. Billman.
Representing: Eleventh District.
Subject: Veterans' Home-Town Care.

WHEREAS, The Veterans' Home-Town Care Program permits the veteran with a service-connected disability to be treated for a portion of his medical care in his own home community by a physician of his own selection; and

WHEREAS, This plan allows a veteran to compare private with public medical care; and

WHEREAS, This program offers medicine an opportunity to roll back a portion of the encroaching wave of socialism; and

WHEREAS, This Home Town Care Plan has been successful in some states and unsuccessful in others for various reasons; now, therefore, be it

Resolved, That the C.M.A. House of Delegates advise their delegation to the A.M.A. to introduce a resolution at the next A.M.A. session requesting that the Board of Trustees of the A.M.A. urge those states where the Veterans' Home Town Care Program was previously unsuccessful to restudy this entire plan and to consider reviving this program: and be it further

Resolved, That the A.M.A. Board of Trustees make available to those states actuarial information, administrative data and technical advice obtained from states where this plan is functioning satisfactorily at present.

* * *

RESOLUTION No. 24

Introduced by: Frederic Ewens.
Representing: Los Angeles County Medical Association.
Subject: Reorganization Committee.

WHEREAS, The Los Angeles County Medical Association through its Reorganization Study Committee has considered organization operation and procedure of the County Society; and

WHEREAS, The Reorganization Study Committee of the Los Angeles County Medical Association has reported to its Council that in its judgment the study should be made at State level, as the study was all inclusive and the elements to be considered were of such magnitude, that such study could best be carried on by a State Study Committee of the House of Delegates; and

WHEREAS, The Council of the Los Angeles Medical Association by appropriate motion has requested the following resolution to be introduced in the House of Delegates; now, therefore, be it

Resolved, That the House of Delegates approve the creation and establishment of a Reorganization Study Committee to study and recommend to this House how maximum benefits, under existing statutes and legislation, may be obtained for the members for their scientific, cultural and economic interest and for the improvement of their security and welfare. Said Study Committee to be appointed by the Speaker of the House and report back to the House of Delegates at its next annual session.

* * *

RESOLUTION No. 25

Introduced by: Alf T. Haerem.
Representing: San Mateo County Medical Society.
Subject: Opinion Polls in C.M.A.

WHEREAS, The population increase in California has resulted in a virtual doubling in the size of C.M.A. in the past ten years leading to complexities and complications in the representative process at county and state levels: and

WHEREAS, C.M.A. has traditionally carried out the desires of its individual physicians by means of the representative process, such representatives devoting

their time, energy and ingenuity to the many difficult problems besetting medicine with such diligence that their solutions have served as models to other societies; and

WHEREAS, In order to preserve and continue such traditions in the face of increasing complexities, the view of individual practicing physicians must always continue to be of paramount interest to his elected representatives in promulgating C.M.A. policy or in representing him at a national level; and

WHEREAS, Techniques have been devised in recent years which make it possible to obtain statistically accurate, impartial group opinions by means of opinion polls which could be applied to C.M.A. by personnel and facilities already available to C.M.A., thereby providing an additional tool for C.M.A. leadership in knowing the opinion, concepts and convictions of California physicians at a grass roots level; now, therefore, be it

Resolved, That C.M.A. employ the facilities already at its disposal to obtain reliable opinion polls of its membership from time to time on such subjects and in such a manner as the C.M.A. council may direct to assist them in their deliberations and judgment.

* * *

RESOLUTIONS No. 29, 31, 33 AND 36

WHEREAS, It is well known that court calendars are crowded with suits for personal liability; and

WHEREAS, Conflicting medical opinions are frequently rendered in connection with personal liability cases; and

WHEREAS, Experience in other states has demonstrated that medical facts can be effectively presented in these cases by impartial expert medical testimony; now, therefore, be it

Resolved, That the Council of the C.M.A. through its appropriate committees and through liaison with the State Bar Association, affirm a strong stand regarding these basic tenets: (1) That the formation of a panel of impartial medical witnesses in personal liability suits will benefit the public, the medical and the legal professions, and (2) That experiments in pretrial conferences as carried on in other states be fostered by both the medical and legal professions.

(Reference Committee No. 3 offered the above resolution, which was approved by the House of Delegates, as a combination of Resolution No. 29, by A. G. Miller of San Mateo County, No. 31 by Robert L. Dennis and Robert E. Burchfiel of Santa Clara County, No. 33 by Clyde L. Boice of Santa Clara and No. 36 by J. H. Yant of the Eleventh District. The committee commented:

"The committee considered jointly Resolutions numbered 29, 31, 33 and 36 which have to do with personal liability, including professional liability. Because of similarity of such resolutions, the committee offers the following substitute resolution which we feel encompasses the spirit of all four.

"We feel that these resolutions as introduced encroach on the legal and judiciary fields and consequently might tend to jeopardize the present efforts of the Council and the Medical Review and Advisory Board to formulate a satisfactory panel system in cooperation with the Bar Association. We feel that our substitute furthers the efforts of cooperation between these groups and the actions of the Council and Medical Review and Advisory Board.")

* * *

RESOLUTION No. 32

Introduced by: Frank J. Novak.
Representing: San Mateo County Medical Society.
Subject: American College of Surgeons.

WHEREAS, The C.M.A. has been a pioneer in promoting modern, public-spirited medical care; and

WHEREAS, Carefully considered health insurance programs of C.P.S. and Blue Cross are forthrightly meeting public demand; and

WHEREAS, The C.M.A. enjoys a good reputation for ethical practices and a high state of medical honesty, and

WHEREAS, A spokesman for the American College of Surgeons has recently come to California and made unfounded, detrimental, public utterances which tend to subvert the modern, public-spirited programs of the C.M.A.; now, therefore, be it

Resolved, That the C.M.A. send a letter of censure to the Board of Regents of the A.C.S. expressing displeasure with the irresponsible utterances made by the spokesman of the A.C.S.

* * *

RESOLUTION No. 35

Introduced by: Clyde L. Boice.
Representing: Santa Clara County Medical Society.
Subject: Council Meetings.

WHEREAS, Many members of our county society have had the opportunity of attending numerous sessions of the Council of the California Medical Association; and

WHEREAS, Our members have found these meetings to be highly informative and conducive to a better understanding of the operations and functioning of the Council of the California Medical Association; and

WHEREAS, We believe that attendance by a greater number of the members of the California Medical Association at similar meetings of the Council would be helpful to them as individuals and to California Medical Association officials as administrators; now, therefore, be it

Resolved, That the Council of the California Medical Association give consideration to holding some of its meetings in Sacramento County, Fresno County, Santa Barbara County, Santa Clara County and other counties which may be found to have adequate facilities in hotel and travel accommodations to make such meetings feasible.

' ' '

RESOLUTION No. 39

Introduced by: Edgar F. Mauer.
Representing: Los Angeles County Medical Association.
Subject: Congressional Appropriation for National Medical Library.

WHEREAS, The members of the California Medical Association are gratified with current legislation authorizing construction of a building to house the National Library of Medicine formerly known as Surgeon General's or Armed Forces Library: and

WHEREAS, The archives of this library, which comprises the largest collection in the world, a good portion of which cannot be replaced are now housed under conditions which endanger their preservation; and

WHEREAS, These archives constitute a vital asset and resource for the maintenance of the public health; and

WHEREAS, Funds for the construction of the National Library of Medicine have *not* been appropriated: now, therefore, be it

Resolved, That the California Medical Association, through its House of Delegates, go on record requesting that such an appropriation be made by the Congress of the United States, and that a copy of this resolution be presented to the House of Delegates of the American Medical Association for their consideration; and be it further

Resolved, That all members of the American Medical Association and its component societies be requested to inform their individual Congressmen of their support of this program; and be it further

Resolved, That this resolution be communicated to the sponsors of this legislation and to our Senatorial and Congressional representatives from California.

' ' '

RESOLUTION No. 41

Introduced by: William F. Quinn.
Representing: Los Angeles County Medical Association.
Subject: Statutes Concerning Adoptions.

WHEREAS, The Los Angeles County Medical Association established a Committee on Adoptions: and

WHEREAS, That Committee has issued a report, which has been approved by the Council of the Los Angeles County Medical Association: and

WHEREAS, Said Committee report contained findings and recommendations that should be reviewed, studied and implemented at state level; and

WHEREAS, The Council of the Los Angeles County Medical Association has instructed that a resolution be introduced before this House of Delegates requesting that the California Medical Association consider the report and findings of the Committee and establish a committee of its own to implement and further these recommendations: now, therefore, be it

Resolved, That the California Medical Association, acting through its House of Delegates, authorize the Speaker of the House to establish and create a Committee on Adoptions procedure in the State of California, and that this Committee consider the report of the Adoptions Committee of the Los Angeles County Medical Association and the findings therein, and recommend to this House of Delegates procedures wherein the statutes concerning adoptions in the State of California may be changed or amended in order to implement the findings of the Adoptions Committee of the Los Angeles County Medical Association.

' ' '

RESOLUTION No. 42

Introduced by: William F. Quinn.
Representing: Los Angeles County Medical Association.
Subject: Tax Deductions for Medical Care.

WHEREAS, Ever-increasing federal and state taxes are becoming more burdensome to the average citizen: and

WHEREAS, The taxpayers' expense in the maintenance of good health is given only partial recognition by taxing authorities as a deduction; and

WHEREAS, Those expenses incurred in the maintenance of health should be entirely deductible from the taxpayers' gross income as a necessary and required expense; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association urge the Legislative Committee of the American Medical Association and the California Medical Association to take such steps to initiate or to have introduced into the Congress of the United States and into the Legislature of the State of California, legislation which would have as its object of allowing all items incurred in the maintenance of health such as, but not limited to, hospital, laboratory, medical and dental expenses as a deduction in the computation of gross income for federal and state tax purposes.

RESOLUTIONS REFERRED TO COUNCIL

The following resolutions were, by vote of the House of Delegates, referred to the Council, or through the Council to an appropriate committee for further study. Report on these items will be made by the Council to the 1958 House of Delegates.

RESOLUTION No. 8

Introduced by: D. M. Campbell (Callaway, author).
Representing: San Francisco Medical Society.
Subject: Public Welfare Medical Care.

WHEREAS, The teaching and training of physicians is an historical right and obligation of medicine; and

WHEREAS, It is essential that teaching institutions have adequate patients to fulfill modern training programs; and

WHEREAS, The increase in health insurance programs has already greatly diminished the number of patients in partial payment and free clinics operated by medical schools and teaching hospital clinics; now, therefore, be it

Resolved, That the appropriate representatives of the C.M.A. concerned with the problem of joint state and federal funds to be used for the care of medically indigent persons, be instructed to consider favorably, that such moneys appropriated by federal and state governments for the medical care of recipients of public welfare benefits, and other medically indigent groups, may continue to be used to pay for medical services rendered through the present established means, including not only the services of private physicians but also those clinics associated with teaching institutions, if either the patient elect to attend such clinic or he be referred thereto by his private physician.

(Comment by Reference Committee No. 3: "In view of the pending legislation regarding the expenditure of money for indigent medical care, the committee moves that this resolution be referred to the Council for the purpose of integration with the Wilbur Report, which recommends that patients be accepted in institutions on written referral from a practicing physician.")

RESOLUTION No. 38

Introduced by: Leon Parrish Fox.
Representing: Santa Clara County Medical Society.
Subject: Trends in Nursing Education.

WHEREAS, The present trend of nursing education on a national, state and local level is emphasizing the didactic and is pitifully and grossly minimizing the practice bedside teaching; and

WHEREAS, Medical education leaders in this country and abroad, found long ago that such trends in training in our profession are not for the best interests of the patient's health and care, and have abandoned these methods as impractical; and

WHEREAS, A few pilot programs of such training in nursing education in California have shown the medical profession and some nursing educators the obvious inadequacies of these programs; and

WHEREAS, Several public hospitals will necessarily be forced to discontinue nursing training programs because of the added expenses of reciprocating with college programs without compensatory bedside duties of student nurses; and

WHEREAS, It is within the realm of our profession to see that adequate nursing care is provided for our patients; now, therefore, be it

Resolved, That the California Medical Association Delegates to the American Medical Association be instructed to make a vigorous organized effort through proper committee, to protest to the National League for Nursing, Inc. and allied curriculum planners, their action, and present our demand for a more practical nurses training program; and be it further

Resolved, That the California Medical Association Council press a more intensive campaign to impress the California League for Nursing, Inc. and Board of Nurses Examiners with the deleterious effects of the present trend of nursing education in California, which has become a proving ground for this experiment.

(Comment by Reference Committee No. 3: "This is a subject of great importance to all of us as evidenced by the comments in committee hearings. However, due to present progress through liaison and the possibility of endangering such progress by this resolution, we move referral of this resolution to the Council, the Council to report to the House of Delegates.")

RESOLUTION No. 40

Introduced by: J. P. Sampson.
Representing: Los Angeles County Medical Association.
Subject: Foreign Medical Graduates.

WHEREAS, There is presently pending before the State Legislature a proposal to allow graduates of foreign medical schools certain privileges before they are licensed by the Board of Medical Examiners; and

WHEREAS, Said proposal would tend to lower the standard of medical care; and

WHEREAS, Said proposal is not in the public interest; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association go on record as opposing Senate Bill No. 2249, which adds Section 2147.7 to the Business and Professions Code allow-

ing foreign medical graduates to treat the sick and afflicted in hospitals before said persons are licensed by the State Board of Medical Examiners; and be it further

Resolved, That this House of Delegates urge and require its Legislative Committee to take such action as it deems necessary to bring this resolution to the attention of the Senate Committee on Businesses and Professions.

(Comment by Reference Committee No. 3: "Having been informed by your legislative committee that the proposed legislation mentioned in this resolution has been opposed by the C.M.A., by direction of the Council it is at this time unnecessary for the House of Delegates to act upon this subject and therefore, we move that this resolution be referred to the Council.")

BY-LAW AMENDMENTS ADOPTED

Under the terms of the C.M.A. Constitution and By-Laws, amendments to the By-Laws may be acted upon after having lain on the table for 24 hours. The 1957 House of Delegates voted favorably on three proposed amendments to the By-Laws, as follows:

AMENDMENT No. 1

Introduced by: Donald D. Lum.

Representing: The Council.

Subject: By-Laws, Chapter VII, Section 1.

Resolved, That Chapter VII, Section 1, of the By-Laws of this Association, California Medical Association, is hereby amended by deleting, "3. Committee on Maternal and Child Care," from subsection (a) of said section, and by adding to said subsection (a) the following: "3. Committee on Government Financed Medical Care." and, be it further

Resolved, That said Section 1 is further amended by adding to subsection (b) the following: "7. Committee on Maternal and Child Care," and, be it further

Resolved, That said Section 1 is further amended by deleting from subsection (a) the following: "4. Committee on Indigent Care. 5. Committee on Problems of the Aged," and by inserting in lieu thereof the following: "4. Committee on Indigent and Aged."

(Editor's note: The changes authorized in this amendment represent a shifting of subcommittees to parent commissions which have been found by the Council to be more appropriate governing bodies, and, in the case of the final paragraph above, the combining of two subcommittees which otherwise might overlap in their functions. The Reference Committee reported no opposition to these changes and stated the amendment "offers constructive revision of the present committee setup.")

AMENDMENT No. 2

Introduced by: Grant Ellis.

Representing: Alameda-Contra Costa Medical Association.

Subject: Amendment to C.M.A. By-Laws Pertaining to Membership Eligibility.

Resolved, That Chapter 2, Section 10, Paragraph (c) of the By-Laws, which now reads, "Any member whose license to practice medicine and surgery in the State of California is revoked shall, upon receipt of written evidence of such revocation by the Secretary of this Association, thereupon cease to be a member of this Association," be changed to read, "Any member whose license to practice medicine and surgery in the State of California is revoked *or suspended* shall, upon receipt of written evidence of such revocation *or suspension* by the Secretary of this Association, thereupon cease to be a member of this Association."

(Editor's note: Reference Committee No. 4 voiced approval of the By-Law amendment offered but, in the interests of clarity, offered substitute wording as above. Under the above amendment, as adopted, the only new language is represented by the words shown in italics. The effect of the amendment is to make suspension, as well as revocation, of a license cause for automatic termination of membership.)

* * *

AMENDMENT No. 3

Introduced by: Gaylord L. Fisher (Roy H. Nyquist, author).

Representing: Long Beach Branch, Los Angeles County Medical Association.

Subject: Creation of Section on Physical Medicine.

Resolved, That Chapter 4, Section 1, Paragraph (a) of the By-Laws, which now reads, "The scientific work of the Association shall be divided into seventeen scientific sections, as follows: Internal Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Pathology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; and Orthopedics.", be changed to read, "The scientific work of the Association shall be divided into *eighteen* scientific sections, as follows: Internal Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Pathology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; Orthopedics; and *Physical Medicine*."

(Comment by Reference Committee No. 4: "By-Law Amendment No. 3, introduced by Doctor Gaylord L. Fisher of Los Angeles, is intended to establish a new section on Physical Medicine. While your Reference Committee feels it is inadvisable to separate the scientific part of the California Medical Association into

too many sections, we feel that some recognition of the small but well integrated group of physicians who specialize in Physical Medicine is advisable. It was emphasized at our hearings that the field of rehabilitation is a broad one and that this proposed section would be confined to Physical Medicine.

"It was the feeling of the Reference Committee that positive action should be taken, and we recommend the [above] substitute amendment.")

CONSTITUTIONAL AMENDMENT INTRODUCED

Under the terms of the C.M.A. Constitution, amendments to the Constitution must lie on the table until "the next session, other than a special session, of the House of Delegates." During this interim the proposed Constitutional amendment must be published "at least twice in separate issues of the official journal of the Association."

The proposed Constitutional amendment below was introduced at the 1957 session of the House of Delegates and will be considered and acted upon at the 1958 session of the House of Delegates. At that time, "if two-thirds of the Delegates present and voting vote in favor thereof, the same shall be adopted." (Article VIII, Section 3, Constitution.)

RESOLUTION

WHEREAS, The physician member population of the State of California has enjoyed tremendous growth in recent years; and

WHEREAS, These physician members are entitled to representation in the offices and council of the C.M.A.; and

WHEREAS, The Constitution of the C.M.A. as it is presently constituted, does not adequately provide this representation; and

WHEREAS, In order to grant all members the representation they are entitled to, the Constitution of the C.M.A. must be amended;

NOW, THEREFORE, The following amendments of the Constitution of the C.M.A. are herewith presented to this House of Delegates in accordance with Article VIII, Section 3, of said Constitution.

AMENDMENTS

ARTICLE III

"Part B—Council"

"Section 9—Composition"

The Council shall consist of:

(a) Each Councilor District, as specified in this Constitution, shall be entitled to one Councilor for each 1,000 members, according to its membership as of the first day of November of the preceding year; provided that each Councilor District shall be entitled to a minimum of one Councilor.

(b) The President, President-Elect, Speaker and Vice-Speaker.

In addition, the Secretary-Treasurer, and Editor, ex-officio, without the right to vote.

(c) District Councilors shall be elected from the Councilor Districts.

(d) Elected Councilors from any one District shall not, at any time, exceed forty per cent (40 per cent) of the total Council membership.

"Section 10—Councilor Districts"

There are ten districts as follows:

District Number One, comprising San Diego County.

District Number Two, comprising Imperial, Orange, Riverside, San Bernardino, Mono and Inyo Counties.

District Number Three, comprising the County of Los Angeles.

District Number Four, comprising Ventura, Santa Barbara and San Luis Obispo Counties.

District Number Five, comprising Kern, Kings, Tulare, Fresno, Madera, Mariposa, Merced, Stanislaus, San Joaquin, Calaveras and Tuolumne Counties.

District Number Six, comprising Monterey, San Benito, Santa Cruz, Santa Clara and San Mateo Counties.

District Number Seven, comprising San Francisco County.

District Number Eight, comprising Alameda County and Contra Costa County.

District Number Nine, comprising Marin, Solano, Napa, Sonoma, Lake, Mendocino, Humboldt and Del Norte Counties.

District Number Ten, comprising Sacramento, Amador, Alpine, Eldorado, Placer, Nevada, Sierra, Yuba, Sutter, Yolo, Colusa, Glenn, Butte, Plumas, Tehama, Trinity, Shasta, Lassen, Modoc and Siskiyou Counties.

"Section 11—Election of Councilors"

District Councilors shall be elected by vote of the delegates from each district in the manner and at the time specified in the by-laws; provided, however, that at the first meeting of the House of Delegates after a District Councilor has been selected, his name shall be submitted to the House by the delegates from the district, and (1) if there is no challenge by any delegate then the Speaker shall declare his election completed, and (2) if any delegate shall challenge the election on any ground, including fitness of the nominee of the district to serve as a District Councilor, the questions presented by the challenge shall be submitted to a Qualifications Commit-

tee consisting of the President, President-Elect and one delegate, appointed by the Speaker, from the Councilor District involved. The Qualifications Committee shall consider all grounds upon which the nominee is challenged and report back to the House. If the committee reports in favor of confirming the nominee's election, the Speaker shall declare him elected. If the committee reports against confirming the nominee's election, a three-fourths affirmative vote shall be necessary to sustain the report of the committee, in which event the nominee shall be ineligible to serve as the District Councilor and the delegates from the district shall immediately proceed to the selection of another nominee for the vacant office. If an adverse report of the Qualifications Committee is not sustained then the nominee shall be declared elected by the Speaker.

Section 14—Election of Councilors on Adoption of Amendments to this Constitution

Upon the adoption of Amendments to Article III, Part B, Sections 9, 10, 11 and 14 of this Constitution, the Delegates from each of the Councilor Districts shall proceed to elect District Councilors as follows:

At the annual meeting at which these Amendments to the Constitution are adopted, each District shall elect the number of Councilors to which the District is entitled, in accordance with Section 9, as amended, to serve for a term of three years.

Upon the adoption of the Amendments to this Constitution and the election of District Councilors, in accordance with the said Amendments, the terms of office of the Councilors-at-Large, holding office at the time of the adoption of the Amendments, will immediately cease and terminate.

ELECTION OF OFFICERS

At the May 1, 1957, session of the House of Delegates the following officers were elected. In the list shown below, terms of office are shown where the office extends for more than one year.

President-Elect.....Francis E. West, San Diego
Speaker.....James C. Doyle, Beverly Hills
Vice-Speaker.....J. Norman O'Neill, Los Angeles

Councilors—for terms ending 1960:

Third District.....Paul D. Foster, Los Angeles
Sixth District.....Donald C. Harrington, Stockton
Ninth District.....Donald D. Lum, Alameda
At-Large.....Arthur E. Varden, San Bernardino
Ivan C. Heron, San Francisco

Councilor—for unexpired term ending 1958:

First District.....James C. MacLaggan, San Diego

Delegates and Alternates to the American Medical Association for two-year terms starting January 1, 1958:

Delegates	*Alternates*
Henry Gibbons III	Claude P. Callaway
Sam J. McClendon	John M. Rumsey
Eugene F. Hoffman	Gerald W. Shaw
John W. Green	Warren L. Bostick
Lewis A. Alesen	J. B. Price
Frank A. MacDonald	John E. Vaughan
Paul D. Foster	Arthur A. Kirchner
*James E. Feldmayer	*Edward C. Rosenow, Jr.
	†Francis J. Cox

Trustees to California Physicians' Service:

John G. Morrison, M.D.	John R. Hilsabeck, M.D.
Leslie B. Magoon, M.D.	Dudley M. Cobb, Jr., M.D.
John F. Wanless, M.D.	Mr. Ransom M. Cook
Mr. George Emde	Mr. Guy W. Wadsworth, Jr.

*New office; term starts May 1957 and ends December 31, 1958.
†Alternate to Dwight L. Wilbur; term ends December 31, 1958.

Council Meeting Minutes

Tentative Draft: Minutes of the 424th and 425th Meetings of the Council, Los Angeles, Ambassador Hotel, April 27th to May 1, 1957.

424th Meeting

The meeting was called to order by Chairman Lum in the Frenchette Room of the Ambassador Hotel, Los Angeles, on Saturday, April 27, 1957, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Vice-Speaker O'Neill, Secretary Daniels, Editor Wilbur, and Councilors West, Wheeler, Loos, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Bostick, Teall, Kirchner, Reynolds, Varden, Heron, Carey and Rosenow.

A quorum present and acting.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff; legal counsel Hassard and Huber; Ben H. Read of the Public Health League of California; county society executive secretaries Scheuber of Alameda-Contra Costa, Geisert of Kern, Bannister of Orange, Marvin of Riverside, Foster of Sacramento, Nute of San Diego, Neick of San Francisco, Thompson of San Joaquin, Wood of San Mateo, Donovan of Santa Clara and DeVere of Stanislaus; Messrs. K. L. Hamman and Wilson Wahlberg and Doctors A. E. Larsen and William Gardenier of California Physicians' Service; Mr. Carl Younger of the Student American Medical Association; Doctors Malcolm Merrill and Robert Dyar of the State Department of Public Health; Rollen Waterson and Richard Blum, Ph.D., consultants; and Doctors Thomas Elmendorf, John W. Cline, Dan O. Kilroy,

Wilbur Bailey, Sidney J. Shipman, Frederic S. Ewens, Eugene F. Hoffman, Joseph F. Sadusk, Jr., Burt Davis, Francis J. Cox, Dwight H. Murray, Edward B. Tuohy, Leon Desimone, Andrew M. Henderson, Jr., Robertson Ward, Wayne Pollock, Donald Cass and E. Vincent Askey, and others.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 423rd meeting of the Council, held March 3 and 17, 1957, were approved.

(b) On motion duly made and seconded, minutes of the 263rd meeting of the Executive Committee, held April 10, 1957, were approved.

2. *Membership:*

(a) A report of membership as of April 22, 1957, was received and ordered filed.

(b) On motion duly made and seconded, 3,237 delinquent members whose dues had been received subsequent to April 10, 1957, were voted reinstatement as active members.

(c) On motion duly made and seconded, 16 applicants were voted Associate Membership. These were: Howard W. Mitchell, H. S. Mouritsen, Alameda-Contra Costa County; Edward I. Cherniss, Abraham D. Cohen, Hector H. Gonzales, Fresno County; Stanley G. Doll, Barbara C. Halpern, William E. Hayes, Miriam G. Wilson, Los Angeles County; Omar U. Need, Madera County; James S. Ketcham, San Diego County; Michel Gay, Stuart Lane, E. E. Lundegaard, H. W. Wilkinson, Ventura County; Marvin C. Davis, Yolo County.

(d) On motion duly made and seconded in each instance, four applicants were voted Retired Membership. These were: F. Earl Brown, Fred H. Linthicum, Ina Moore-Freshour, Roy F. Sheldon, Los Angeles County.

(e) On motion duly made and seconded, reductions of dues were voted for 22 applicants for reasons of prolonged illness or postgraduate study.

3. *Financial:*

(a) A report of bank balances as of April 22, 1957, was received and ordered filed.

(b) A proposed budget for the 1957-1958 fiscal year was presented by the Auditing Committee and, after considerable discussion, was approved for presentation to the House of Delegates.

4. *Medical Review and Advisory Board:*

(a) Doctor Joseph F. Sadusk, Jr., chairman of the Medical Review and Advisory Board, reviewed the activities of that board to date. Following a review by Mr. Hassard of the potential advantages of maintaiuing panels of physicians as expert witnesses in personal injury cases, Doctor Sadusk requested the Council to appoint a committee to meet with a similar committee of the State Bar of California to explore the possibility of establishing such panels.

On motion duly made and seconded, it was voted to approve the establishment of a committee to meet with a similar committee of the State Bar of California on the subject of panels of physicians as expert witnesses in personal injury cases, such committee to consist of Doctors Francis E. West, Rees B. Rees, Donald Ross, Donald A. Charnock and Joseph F. Sadusk, Jr., chairman.

Doctor Sadusk also requested the Council to affirm the belief of the Medical Review and Advisory Board that the desirable limits of professional liability insurance should be considerably in excess of $5,000 for single cases. On motion duly made and seconded, the Council affirmed this belief.

Doctor Sadusk also presented a proposed budget for the 1957-1958 fiscal year, which, after discussion and amendment, was approved as an item in the budget to be presented to the House of Delegates.

5. *Committee on Public Relations:*

Doctor Sidney J. Shipman, chairman of the Committee on Public Relations, presented a supplemental report which was proposed to be presented to the House of Delegates. Doctor Shipman also suggested that this committee be reconstituted in order to secure members who would be able to attend committee meetings.

On motions duly made and seconded, the Council voted the following actions:

(a) Approval of mailing to the Association's membership a summary of the current psychological study report.

(b) Retention of Dr. Richard Blum, Ph.D., as a consultant in applying current research findings in a practical manner.

(c) Approval of establishment by the public relations staff, in cooperation with Dr. Blum, of a long-range program for the Association, the county societies and the members to treat what are now known to be public relations problems.

6. *Cancer Commission:*

(a) Doctor John W. Cline, chairman of the Cancer Commission, reported on the failure of an Association-sponsored legislative proposal to win approval in a State Senate committee and presented a resolution which he asked be adopted by the Council. The resolution read as follows:

WHEREAS, A.B. 2359 is needed and meritorious legislation based upon principles advanced by the Cancer Commission of the California Medical Association; and

WHEREAS, It was introduced at the request of and is sponsored by the California Medical Association,

the California Osteopathic Association and the American Cancer Society, California Division, and is supported by the California Hospital Association, the California State Nurses' Association, the American Federation of Labor, the Congress of Industrial Organizations, the Congress of Parents and Teachers, the Federation of Women's Clubs and other groups of citizens; and

WHEREAS, It is the considered opinion of the California Medical Association that delay in the passage of A.B. 2359 or substantially similar legislation would endanger the health and welfare of the people of California by continuing the situation it was designed to correct and serving as an invitation for licensed and unlicensed promoters of fraudulent cancer cures to come to California; now, therefore, be it

Resolved, That the California Medical Association request the Senate of the State of California to enact A.B. 2359 or substantially similar legislation during the current session of the Legislature, if possible; and be it further

Resolved, That copies of this resolution be forwarded to all members of the Senate of the State of California.

On motion duly made and seconded, the resolution was approved.

(b) Doctor Cline and Mr. Hassard discussed a proposed legislative proposal designed along lines similar to A.B. 2359 but without all the features of the latter. On motion duly made and seconded, it was voted that the Council could not approve this proposal because it is not consistent with the resolution just adopted and is not substantially similar to A.B. 2359.

7. *Supplemental Report to the House of Delegates:*

(a) Mr. Hassard presented a proposed By-Law amendment to rearrange several committees in line with previous Council actions and this was approved for presentation to the House of Delegates.

(b) It was agreed that a supplemental report be prepared to cover the actions of the Council on several resolutions referred to it by the 1956 House of Delegates.

(c) A proposal to withdraw the present charter held by the Shasta County Medical Society and request House of Delegates approval of a new charter in the name of Shasta-Trinity County Medical Society, in line with previous Council action, was approved.

8. *Rehabilitation:*

(a) Doctor Francis J. Cox, a member of the steering committee for the Governor's Conference on Rehabilitation scheduled for the fall of 1957, reported that plans had been amended to include a two-day, rather than three-day, session, that the conference will be referred to as a study group and the list of invitees will be limited to about 500. Funds to finance the meeting will be solicited from private sources.

(b) Doctor Francis E. West, chairman of the Commission on Public Health and Public Agencies, reported that a portion of governmental rehabilitation funds had been earmarked for construction of rehabilitation centers. He urged that all county societies be encouraged to secure information on such earmarking of funds in their areas.

(c) On motion duly made and seconded, it was voted that the Council reaffirm its previous principles toward rehabilitation and to encourage county societies to establish rehabilitation committees to work on their local programs.

(d) On motion duly made and seconded, it was voted to split the present Committee on Industrial Health and Rehabilitation into two committees, one on Industrial Health and one on Rehabilitation.

8. *Committee on Fees:*

Doctor Francis J. Cox reported on a meeting with representatives of the Crippled Children's Services of the State Department of Public Health and expressed belief that plans might be worked out for the direct billing and payment of fees for specified professional services, including radiology.

Doctor Cox also discussed the theory of anesthesia fees being established on a specific procedural basis and, on motion duly made and seconded, it was voted to approve the theory of setting anesthesia fees on a specific procedural basis.

9. *Commission on Medical Services:*

(a) Doctor Robert Shelton referred to a proposal advanced by him on March 8, 1957, relative to a new type of voluntary health insurance to provide for major medical expenses, and asked that the Council approve the proposal and urge California Physicians' Service to issue such contracts if possible. On motion duly made and seconded, it was voted to approve the proposed type of insurance and transmit a report on it to the Board of Trustees of C.P.S.

(b) Doctor Hollis L. Carey, chairman of the Commission on Medical Services, reported on the impending program of public assistance for medical services to the indigent, blind and dependent children under the terms of Public Law 880. He outlined the manner in which a pilot study in Butte County had shown that certain services could be provided at a savings to governmental bodies and stated that California Physicians' Service is prepared to administer contracts to provide such services. On motion duly made and seconded, it was

voted to reaffirm the Council's earlier decisions on this program, including (1) that emphasis of the program be placed on covering home and office visits, (2) that a fee schedule be devised, (3) that California Physicians' Service be the fiscal agent, and (4) that the county societies be advised of these principles.

(c) On motion duly made and seconded, it was voted to approve in principle the actions of the Committee on Fees to date.

10. *Commission on Public Health and Public Agencies:*

Doctor Francis E. West, chairman of the Commission on Public Health and Public Agencies, reported on the current status of the Crippled Children's Program, the California Council on Retarded Children and the California Conference on Health and Recreation.

Doctor West also reported that the recorded incidence of poliomyelitis in California this year is the lowest in recorded history.

11. *Committee on Scientific Work:*

Doctor Albert C. Daniels, chairman of the Committee on Scientific Work, reported that the committee had recommended that guest speakers be reimbursed by the payment of transportation, living expenses and an honorarium of $500. On motion duly made and seconded, this proposal was approved.

Doctor Daniels also asked that the Council give thought to the possibility of changing the time of the Annual Session to the fall of the year in order to avoid conflicts with other meetings.

Doctor Daniels also discussed the suggestion of his committee that at least a portion of Annual Session programs be devoted to a postgraduate educational type of session, possibly with fees charged for attendance. On motion duly made and seconded, it was voted to instruct the Committee on Scientific Work to proceed with such arrangements.

12. *Committee on Blood Banks:*

Doctor Andrew M. Henderson, Jr., chairman of the Committee on Blood Banks, presented a resolution proposed to be introduced into the House of Delegates of the American Medical Association on the subject of the Joint Blood Council. On motion duly made and seconded, it was voted to leave such action to the discretion of the California delegates to the A.M.A.

13. *Outgoing Councilors:*

Doctor Doyle proposed that retiring members of the Council be recognized for their services by the presentation of a scroll or similar token of appreciation. On motion duly made and seconded it was voted that such recognition be extended.

14. *Committee on Insurance:*

Doctor Arthur A. Kirchner, chairman of the Committee on Insurance, discussed the possibility of adding to existing insurance contracts, at no additional cost, a provision for the payment of benefits for illness on the first day of the illness, provided the member is hospitalized at that time.

Doctor Kirchner presented Messrs. Charles O. Finley and Calvin L. Smith of Charles O. Finley & Co. and Mr. Robert Myles of Lumberman's Mutual Casualty Insurance Co., underwriters of the group program.

Discussion was held on proposed additional coverage under the present accident and health insurance plan for Association members. On motion duly made and seconded, it was voted that the component county societies be polled as to their wishes before the Association entered into any further group insurance program.

15. *Committee on Other Professions:*

Doctor Wayne Pollock, chairman of the Committee on Other Professions, gave a progress report on meetings being held with another group and was instructed to continue such meetings.

16. *Principles of Medical Ethics:*

Doctor Edward Tuohy, an A.M.A. Delegate from the Section on Anesthesiology, presented a proposed amendment to the A.M.A. Principles of Medical Ethics. On motion duly made and seconded, it was voted to refer this proposal to the California delegates to the A.M.A.

17. *Chiropody:*

Doctor Reynolds presented a request from several chiropodists, who ask that their services be recognized by California Physicians' Service. It was agreed that this matter be referred to the Committee on Fees in cooperation with the Committee on Other Professions.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 9:30 a.m. on Wednesday, May 1, 1957.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

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425th Meeting

The meeting was called to order by Chairman Lum in the Frenchette Room of the Ambassador Hotel, Los Angeles, on Wednesday, May 1, 1957, at 5:00 p.m.

Roll Call:

Present were President MacDonald, President-Elect West, Secretary Daniels, Speaker Doyle, Vice-

Speaker O'Neill, and Councilors MacLaggan, Foster, Wheeler, Varden, Pearman, Kirchner, McPharlin, Heron, Carey, Rosenow, Lum, Wadsworth, Harrington, Teall, Reynolds and Bostick, and Editor Wilbur.

Present by invitation were Messrs. Hunton, Clancy and Gillette of C.M.A. staff and legal counsel Hassard.

1. *Introduction of New Officers and Councilors:*

The Chairman introduced Doctor Frank A. MacDonald, newly installed as President, Doctor Francis E. West, newly elected President-Elect, and Doctor James C. MacLaggan and Paul D. Foster, newly elected Councilors.

2. *Election of Council Officers:*

On nomination duly made and seconded, a chairman and vice-chairman of the Council were unanimously elected as follows: Chairman, Donald D. Lum; Vice-Chairman, Ivan C. Heron.

3. *Appointments:*

On nominations duly made and seconded, the following appointments were unanimously voted: Secretary-Treasurer, Doctor Albert C. Daniels; Executive Secretary, John Hunton; Editor, Doctor Dwight L. Wilbur; Legal counsel, Peart, Baraty & Hassard.

The Council concurring, the chairman named as members of the Auditing Committee Doctors Heron (chairman), Reynolds and Sherman.

The chairman named, the Council concurring. Doctors Heron, Reynolds and Wadsworth as C.M.A. representatives on the C.P.S. Board of Trustees.

4. *Bank Resolutions:*

On motion duly made and seconded, the usual bank resolutions were approved for the coming year.

5. *Meetings for 1957-1958:*

A schedule of Council and Executive Committee meetings, calling for Council meetings on the second Saturday of alternate months, starting July 13, 1957, and Executive Committee meetings on the second Wednesday of the alternating months, starting August 14, 1957, was presented and approved. Discussion was held on the advisability of arranging two-day Council meetings but no action was taken.

6. *Health Insurance:*

On motion duly made and seconded, it was voted to appoint a special committee to study certain aspects of health insurance, the committee to prepare a report for distribution to the Council at least ten days prior to the July 13 Council meeting.

7. *Committee on Unlawful Practice:*

On motion duly made and seconded, it was voted to request the chairman of the Commission on Professional Welfare to request the discontinuance of the Committee on the Unlawful Practice of Medicine as a subcommittee of that commission, so that the committee might be established as a special committee and thus provide a flexibility of membership.

8. *Review of Commissions and Committees:*

The Council concurring, the chairman appointed Doctors Rosenow (chairman), Teall and West as a committee to review the organization of all commissions and committees. It was agreed that all special committees should have a term of one year only, subject to reappointment if desired.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:00 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

Executive Committee Minutes

Tentative Draft: Minutes of the 263rd Meeting of the Executive Committee, Sir Francis Drake Hotel, San Francisco, April 10, 1957.

The meeting was called to order by Chairman Heron in the Monterey Room of the Sir Francis Drake Hotel, San Francisco, on Wednesday, April 10, 1957, at 3:30 p.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Council Chairman Lum, Auditing Committee Chairman Heron and Secretary Daniels. Absent for cause, Editor Wilbur.

Present by invitation were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff, Legal Counsel Hassard and Doctor Bert Halter of San Francisco.

Present by invitation during a part of the meeting were Mr. Martin E. Segal, consultant to numerous labor union health and welfare funds and some 25 associates, representing labor and management trustees of the various funds, fund administrators and legal counsel.

1. *Membership:*

(a) On motion duly made and seconded, 1,020 members whose dues had been received since April 1, 1957, were voted reinstatement as active members.

(b) On motion duly made and seconded, 26 applicants were voted Associate Membership. These were: Jacob Malin, Henry D. Neufeld, Alameda-Contra Costa County; Stephen N. Appley, Rudolph

E. Chaney, William A. Conover, Sherman W. Hartman, Florence H. Hiscock, F. B. Critchlow, Jr., Richard Koch, Seymour M. Perry, Kenneth Z. Zike, Los Angeles County; Edward F. Mullaly, R. L. Nattkemper, Napa County; Florence L. Miller, Riverside County; Albert F. Crumley, San Diego County; Eugene Eisenberg, William W. Hofmann, Robert H. Isaac, Joseph P. Kriss, J. A. Luetscher, Jr., Elliot Rapaport, Stephen E. Ross, San Francisco County; D. T. Eikenberry, San Mateo County; Charles K. Linehan, Solano County; James T. Harrison, Sonoma County; Edwin A. Doane, Ventura County.

(c) On motion duly made and seconded, Doctor Lillian P. Smolt of Ventura County was voted Retired Membership.

(d) On motion duly made and seconded, 11 members were voted reductions of dues because of prolonged illness or postgraduate study.

2. *Financial:*

An application for a loan to rehabilitate flood damage from the floods of late 1955 was discussed. It was pointed out that the funds approved by the Council for this purpose had been completely advanced and no further authorization voted. On motion duly made and seconded, it was voted to advise the applicant that such loan funds were no longer available.

3. *Union Health and Welfare Trust Funds:*

Mr. Martin E. Segal, consultant to union health and welfare trust funds, presented a problem encountered by such funds where professional fees were greater than the funds provided for specific procedures and asked the assistance of the Association in bridging this gap. General discussion followed and Mr. Segal was assured that the Association would give serious study to this problem.

4. *California Pharmaceutical Association:*

Discussion was held on a demand from the California Pharmaceutical Association that the C.M.A. prohibit a group of physicians from opening a pharmacy in their own building. It was pointed out that the A.M.A. has ruled that this is not unethical if there is no exploitation of the patient. It was agreed that county societies should police such situations to assure the fact that there is no such exploitation.

5. *A.M.A. Committee on Alcoholism:*

On motion duly made and seconded, it was voted to extend an invitation to the A.M.A. Committee on Alcoholism to hold its 1957 annual meeting in San Francisco.

6. *California Conference of Social Workers:*

On motion duly made and seconded, it was voted to authorize Secretary Daniels to assist in preparing a medical program as part of the annual meeting of the California Conference of Social Workers.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 7:40 p.m.

IVAN C. HERON, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

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264th Meeting

Tentative Draft: Minutes of the 264th Meeting of the Executive Committee, Los Angeles, Ambassador Hotel, May 1, 1957.

The meeting was called to order by Chairman Heron in the Frenchette Room of the Ambassador Hotel, Los Angeles, on Wednesday, May 1, 1957, at 6:00 p.m.

Roll Call:

Present were President MacDonald, President-Elect West, Council Chairman Lum, Speaker Doyle, Auditing Committee Chairman Heron, Secretary Daniels and Editor Wilbur.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Clancy and Gillette of C.M.A. staff and legal counsel Hassard.

1. *Election of Chairman:*

On motion duly made and seconded, Doctor Ivan C. Heron was unanimously elected Chairman of the Committee.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:10 p.m.

IVAN C. HERON, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

IT IS A PRIVILEGE to serve American medicine. You have honored me and my county auxiliary by electing me to serve as your president for the coming year. I pledge you my loyalty.

My theme for the year has been taken from Dr. Charnock's address at our past Fall Conference—"Inform your Membership."

As auxiliary members we have a two-fold service to render: (1) education to ourselves on subjects pertaining to the medical profession, and (2) bringing this message of medicine to our home communities by means of a positive program of action.

We must constantly reevaluate our program to keep pace with the trend of events (and changing values) in the world today. All of us live a more hurried life than ever before. Women all over the nation are busy with a multitude of programs unequaled in our history. Therefore, we should do all in our power to keep our own members interested, informed and eager to serve the auxiliary at all times.

Good programming is a helpful factor in doing this. It is my hope that those who plan the programs will be aware of their scope of influence and their own potential usefulness. Each hour that people are willing to give to attend meetings should be most carefully utilized in the most interesting way and planned to give the utmost in useful information.

There is no safer way of projecting plans for the future than by evaluating our past activities. Our first objective has been and is to cultivate friendliness and promote understanding among physicians' families. We know full well that when people learn to know and like each other and take time to laugh and play together, they can accomplish great things working together.

From this, it follows naturally that, as an auxiliary to the Medical Association, we assist the Association in its program for the advancement of medicine and public health. Therefore, it is helpful if we are acquainted with the problems of the medical profession and can discuss them with persons we meet in our day to day contacts. By so doing, we can often explain the position of organized medicine to those with whom the medical profession has otherwise little contact. For example, in all our efforts to support good legislation, as well as in our attempts to defeat detrimental measures, the members of the Woman's Auxiliary to the California Medical Association have been of invaluable help. We have been helpful in carrying information to the voters of our communities many times when the physician has been too busy with his practice to do so.

Those of you who have the *privilege* of being here today—as presidents, presidents-elect and delegates from your county auxiliaries and members of the Woman's Auxiliary to the California Medical Association, also have responsibility. With privilege comes responsibility. Your specific one today is to report to those at home the accomplishments and progress of your auxiliary. Just as you have accepted the privilege of membership in your auxiliaries, so we hope you will accept the responsibility of stressing the value of "Informing your Membership."

Each organization is faced with the problem of competing with many other activities for the attention of its membership. Every community has many outlets for the talents of an auxiliary member. Therefore, the appeal of more active participation and acceptance of responsibilities should be stimulated by the effective utilization of the special talents of our auxiliary members; because our strength is measured by our unity of purpose and our effective partnership with the medical profession. This could be done by stressing good program planning; getting interesting programs presented in a variety of ways so that there is a strong desire on the part of our members to participate actively in the work of the auxiliary, to attend its meetings and, when called upon, to become an officer.

Through active participation we may acquire a feeling of belonging. As members of the Auxiliary to the American Medical Association, of the Auxiliary to the California Medical Association and of our county auxiliaries, we should be aware of our great responsibilities. There must be no complacency within the membership of the auxiliary. Without the active participation of individual members there would be no effective organization.

Again, let me thank you. I am grateful for this opportunity to serve the medical profession and the auxiliary. I ask you to join with me in your individual and collective abilities. I sincerely hope that the fine spirit of cooperation which has brought such successful accomplishments to the auxiliaries in the past will continue in the future.

MRS. LEONARD D. OFFIELD

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Dr. Wilber J. Menke, Jr., city health officer of Pasadena since 1953, resigned as of June 1. He said that he was leaving because of failing health of his parents in the Middle West. The resignation was accepted with regret by the city manager, who announced that a successor would be chosen by competitive examination.

ORANGE

Dr. Waldo S. Wehrly of Santa Ana was elected president of the Orange County Tuberculosis and Health Association at the organization's annual meeting. Dr. Helen Robertson was elected first vice-president and Dr. Samuel J. Camarata was reelected to the board of directors. Dr. Wehrly is a son of the late Dr. John Wehrly, who was one of the founders of the association in Orange county.

PLACER

Dr. Richard F. White of Santa Rosa has been appointed health director of Placer County by the county board of supervisors. Dr. White, who is to take over his duties July 15, succeeds Dr. Ruth Moldenhauer.

SAN DIEGO

The Eleventh Annual Postgraduate Assembly sponsored by the San Diego County General Hospital will be held September 18 and 19. Further information may be had from J. Haddon A. Peck, Jr., M.D., 525 Hawthorn Street, San Diego 1.

SAN FRANCISCO

Dr. H. Corwin Hinshaw, head of the Division of Chest Diseases at Stanford University School of Medicine, is in Moscow by invitation to speak before the U.S.S.R.'s Sixth All-Union Congress on Tuberculosis which is being held June 6 to 15. His paper is entitled "Present Day Treatment of Tuberculosis in the United States."

Dr. Hinshaw was invited by Professor F. V. Shebanoff, chief of the organizational committee for the Congress.

* * *

Dr. L. Henry Garland of San Francisco was elected a chancellor of the American College of Radiology at the annual meeting of the organization held in Chicago.

* * *

Helen Nahm, Ph.D., director of the Division of Nursing Education of the National League for Nursing, has been named dean of the University of California School of Nursing at San Francisco and Berkeley.

SANTA CLARA

Dr. S. Fred Kaufman, San Jose, was elected president of the Santa Clara County Tuberculosis Association at the recent annual meeting. He succeeds Dr. William Graham in that position. Dr. Margaret Huelskamp of San Jose was elected secretary.

GENERAL

The American Dermatological Association is offering a series of awards for the best essays submitted for original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. The purpose of this contest is to stimulate investigators to original work in these fields. **Cash awards** will be presented as follows: Five hundred dollars, four hundred dollars, three hundred dollars and two hundred dollars, for first, second, third and fourth prizes respectively.

Manuscripts are to be submitted not later than November 1, 1957, to Dr. J. Lamar Callaway, secretary, American Dermatological Association, Duke Hospital, Durham, North Carolina.

Competition in this contest is open to scientists generally —not exclusively to physicians. The results will be announced prior to January 1, 1958.

* * *

The Seventh Congress of the Pan-Pacific Surgical Association will be held in Honolulu, T.H., November 14 to 22, 1957. All members of the medical profession are cordially invited to attend and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities, the official announcement of the meeting says.

Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, director general of the Pan-Pacific Surgical Association, Room 230, Young Building, Honolulu, T.H.

* * *

The 30th Scientific Sessions of the American Heart Association, to be held in Chicago's Hotel Sherman, Friday, October 25 through Monday, October 28, will commemorate the 300th anniversary of the death of William Harvey, English scientist who discovered the circulation of the blood. An exhibit and a film showing Harvey's work are planned.

The program will include an all-day scientific session Friday for physicians in general practice on "Prevention and Management of Cardiovascular Emergencies." This special course is open to all registrants at the Annual Meeting and any others who may be interested. On Friday evening, a special session will take place on "Instrumental Methods in Cardiovascular Diagnosis."

Other sessions will be on the field of streptococcal control and prevention of rheumatic fever, clinical cardiology, circulation, congenital heart disease, high blood pressure, peripheral vascular disease, and atherosclerosis.

* * *

The Division of Obstetrics and Gynecology of the United States Section, International College of Surgeons, announced that **two awards will be made for the best manuscripts** not exceeding 5,000 words submitted by December 1, 1957. The first prize will be $500 and the second $300.

Contestants must hold the degree of Doctor of Medicine from an accredited college of medicine, and (1) be interns, residents or graduate students in obstetrics and gynecology or (2) be teachers of obstetrics and gynecology. Fellows of the college are not eligible.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Hospital Disaster Plans, sponsored by Medical Education for National Defense. Friday and Saturday, June 21 and 22. Eleven hours. No fee.

Sixth Annual Symposium in Clinical Laboratory Technology. Saturday and Sunday, June 22 and 23. Eleven hours. Fee: $20.00.

Techniques of Hypnosis. Monday, Tuesday and Wednesday morning, June 24, 25 and 26. Fifteen hours. Fee: $60.00.

Advanced Techniques and Application of Hypnosis. Wednesday afternoon, Thursday and Friday, June 26, 27, 28. Fifteen hours. Fee: $100.00.

Electrocardiography. Monday through Friday, July 8 to 12. Guest instructor: J. Scott Butterworth, M.D., Associate Professor of Medicine, New York University. Thirty hours. Fee: $150.00.

Auscultation. Monday through Wednesday, July 15 to 17. Guest instructor: J. Scott Butterworth, M.D., New York University. Eighteen hours. Fee: $100.00.

Current Concepts in Medicine. Thursday, Friday and Saturday, August 1 to 3. Fifteen hours.†

Postgraduate Medical Seminar Cruise to the Hawaiian Islands leaving August 28, returning September 9. Inclusive fare: $559.00 up.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: $250.00 per month.

Refresher Course in Anatomy. July 29 to August 2 on Berkeley campus. Fee: $75.00.

Internal Medicine. Monday through Saturday, September 16 to 21. Forty-two hours.*

Medicine for General Practitioners. East Oakland Hospital, Tuesday evenings, September 17 to December 10. Twenty-four hours. Fee: $50.00.

Endocrinology. Evening Series in Sacramento, Wednesday evenings, September 25, October 23 and November 20. Fee: $15.00.

Annual Ophthalmological Conference. Wednesday-Friday, December 4 to 6.*

Dermatology. Friday and Saturday, January 17 and 18, 1958.*

Course for Physicians in General Practice. Monday through Friday, March 3 to 7, 1958, Mount Zion Hospital.*

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Morning Clinical Conferences, each Monday, Room 515. *Contact:* D. H. Pischel, M.D., Professor, Division of Ophthalmology, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Vue-Vox Postgraduate Refresher Courses. Courses are made up of four or more half-hour lectures each, recorded on hi-fi magnetic tape and illustrated by 35-mm. filmstrips or slides in full color, and adapted for use on any standard tape recorder and filmstrip or slide projector, automatic or manual.

Contact: Paul D. Foster, M.D., chairman, Committee on Audio-Visual Courses, College of Medical Evangelists School of Medicine, 316 North Bailey St., Los Angeles 33.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

POSTGRADUATE INSTITUTES, 1957

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 19 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

POSTGRADUATE INSTITUTES—1958

SAN BERNARDINO, RIVERSIDE AND ORANGE COUNTIES, in cooperation with College of Medical Evangelists, Arrowhead Springs Hotel, San Bernardino County, February 13 and 14, 1958. Chairman: Elmer O. Carlson, M.D., 756 N. Euclid Ave., Ontario.

WEST COAST COUNTIES, in cooperation with UCLA School of Medicine, Golden Bough Theater and La Playa Hotel, Carmel, March 6 and 7, 1958. Chairman: Chester G. Moore, M.D., 440 E. Romie Lane, Salinas.

*Hours and Fees to be announced.

†Fee to be announced.

San Joaquin Valley Counties, in cooperation with Stanford University School of Medicine, Hotel Californian, Fresno, March 20 and 21, 1958. Chairman: Henry L. Tiesche, M.D., 1759 Fulton St., Fresno.

North Coast Counties, in cooperation with USC School of Medicine, Hoberg's Resort, Lake County, April 10 and 11, 1958. Chairman: Alfred A. Thurlow, Jr., M.D., 185 Sotoyome Ave., Santa Rosa.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

* * *

Audio Digest Foundation, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 1919 Wilshire Blvd., Los Angeles 57.

Medical Dates Bulletin

JUNE MEETINGS

Idaho State Medical Association 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

State Board of Medical Examiners Written Examination, San Francisco, June 17 to 20.

Society for Pediatric Research, La Playa Hotel, Carmel, June 16 to 21. *Contact:* Sydney S. Gellis, M.D., secretary, 330 Brookline Ave., Boston 15, Mass.

American Pediatric Society, La Playa Hotel, Carmel, June 17 to 19. *Contact:* A. C. McGuinness, M.D., secretary, 1427 I St., N.W., Washington, D.C.

Wyoming State Medical Society Rocky Mountain Medical Conference Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

SUMMER AND FALL MEETINGS, 1957

Long Beach Heart Association, applications for Cardiovascular Fellowship being accepted at Los Angeles County General Hospital for fiscal year 1957-58. Basic stipend for single person, $3,400 per annum with additional allotment for each dependent of $350.00 per annum. Maximum annual stipend, $4,800.00. Fellowship to begin July 1, 1957. *Contact:* Donald H. Root, M.D., chairman, Research Committee, Long Beach Heart Association, 921 Pacific Ave., Long Beach 13.

Colorado Division, Cancer Society Rocky Mountain Cancer Conference, 9 a.m., July 10 and 11, Shirley-Savoy Hotel, Denver. *Contact:* John S. Bouslog, M.D., chairman, 835 Republic Bldg., Denver 2.

State Board of Medical Examiners Oral Examination, Los Angeles, August 17.*

State Board of Medical Examiners Written Examination, Los Angeles, August 19 to 22.

Utah State Medical Association Annual Scientific Session, September 5 to 7, Hotel Utah, Salt Lake City, Utah. *Contact:* Harold Bowman, 42 South Fifth Street, Salt Lake City.

Saint John's Hospital Annual Postgraduate Assembly, September 12 to 14, Saint John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, Postgraduate Assembly, 22nd Street at Santa Monica Blvd., Santa Monica.

Washington State Medical Association Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

San Diego County General Hospital 11th Annual Postgraduate Assembly, September 18 to 19. Reception for all registrants, 5:00 to 7:00 p.m., September 18. *Contact:* Haddon A. Peck, Jr., M.D., 525 Hawthorne St., San Diego.

Nevada State Medical Association Annual Meeting, Las Vegas, September 25 to 28. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 188, Reno.

American Fracture Association Eighteenth Annual Meeting, El Paso, Texas, September 30 to October 3. *Contact:* H. W. Wellmerling, M.D., 606 Grieshum Bldg., Bloomington, Illinois.

San Francisco Heart Association 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

Western Industrial Medical Association Sixteenth Annual Meeting combined with First Western Industrial Health Conference, Biltmore Hotel, Los Angeles. October 4 to 6. *Contact:* E. J. Zaik, M.D., secretary, Western Industrial Medical Association, 740 South Olive Street, Los Angeles 14.

San Diego County Heart Association Seventh Annual Professional Symposium on Heart Disease. U. S. Naval Hospital, San Diego, October 8. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth Ave., San Diego.

Los Angeles County Heart Association 27th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 W. Eighth St., Los Angeles, October 9 and 10. *Contact:* Walter S. Thompson, Jr., M.D., chairman, 660 S. Western Ave., Los Angeles.

California Society of Internal Medicine Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

California Academy of General Practice Ninth Annual Scientific Assembly, November 3 to 6, Hotel Statler, Los Angeles. *Contact:* William W. Rogers, executive secretary, 461 Market Street, San Francisco.

American College of Chest Physicians Postgraduate Course on Diseases of the Chest, Ambassador Hotel, Los Angeles, December 9 to 13. *Contact:* Alfred Goldman, M.D., chairman, 416 N. Bedford Drive., Beverly Hills.

*Note: In regard to the dates of oral examinations, applicants are requested *NOT* to arrange to come to an oral examination until they receive a notice of the action of the Credentials Committee advising them of the time and place to appear.

THE PHYSICIAN'S *Bookshelf*

PRACTITIONERS' CONFERENCES—Held at The New York Hospital-Cornell Medical Center—Volume 5—Edited by Claude E. Forkner, M.D., F.A.C.P., Professor of Clinical Medicine, Cornell University Medical College. Appleton-Century-Crofts, Inc., New York, 1956. 396 pages, $6.75.

This is the fifth volume of *Practitioners' Conferences* held at the Cornell Medical Center. The current volume presents a wide variety of subjects in which men of various disciplines participate. The current volume discusses peptic ulcer, mitral stenosis, essential hypertension, carcinoma of cervix and breast. menstrual problems, fluid and electrolyte balances, etc.

The conferences in general are sound, clearly presented, fairly well illustrated, but are at a relatively superficial level. For example, in the discussion on mitral stenosis, very little is presented with respect to the difficult diagnostic case, to the variations depending upon pulmonary hypertension or calcification of the mitral valve, and no discussion of current physiologieal studies with left heart catheterization are included. The discussion on essential hypertension emphasizes the humeral factors and sympathectomy, but ganglionic blocking agents and psychosomatic concepts are scarcely touched upon. The discussion of cerebral vascular aceidents is mainly notable because of the emphasis on rehabilitation, but insufficient attention was placed on the medical management and the problems of anticoagulant therapy.

The illustrations of films in the chapter on peptic ulcer could not be found despite reference to them in the text. The illustration of angiocardiograms and mitral stenosis were found in the chapter on peptic ulcer.

The book can be recommended as interesting, authoritative accounts of interest to the general practitioner, but are not of sufficient detail to provide new information for the specialist.

One very useful feature of the book is an excellent summary by Dr. Claude Forkner, the editor, at the end of each chapter.

* * *

DIABETES MELLITUS—Handbook for Physicians—Howard F. Root, M.D., Medical Director, Joslin Clinie, Boston, Lecturer in Medieine, Harvard University; and Priscilla White, M.D., Instruetor in Pediatrics, Tufts University, Boston. Landsberger Medical Books, Inc. Distributed by The Blakiston Division of the McGraw-Hill Book Co., New York, 1956. 346 pages, $7.00.

This is one of a group of books for the general practitioner, some already released, with others in preparation. It is scarcely a handbook, covering the field of diabetes almost as completely as any text. The emphasis is on management of the disease and its complications. The authors urge early diagnosis and treatment in hopes of lessening severity of the disease later. They advise weighing the food, but are willing to compromise. They feel the doctor should be able to instruct and diseuss the diabetic diet with the patient. The authors outline the formulation of a diet prescription, but the doctor will be hard put to convert the calories, fat, carbohydrate and protein to grams of food and meals for the patient from the directions given. The Food Exchange Method is mentioned but its use is not elaborated upon. Here one might turn to the American Diabetic Association's Guide Book for Physicians which is a practieal handbook, whose use will permit the prescription of a diet that both patient and physician can understand. In the use of insulin, one wonders if the limits of 30-50 units of protamine zinc insulin that the authors permit are not too high for safety with attendant early morning hypoglycemia. Their ideas on the management of the pregnant diabetic and the controversial use of hormonal therapy are presented. The details of management of acidosis, surgery in diabetes, juvenile diabetes, complications, etc. are well covered and make up two-thirds of the book. Some laboratory methods are described, but one wonders what general practitioner or physician is going to need the details for determining 17-ketosteroids or 17-hydroxycorticoids in the urine. The material is up to date with a short section on the oral sulfonamide treatment. The book is clearly printed on a fair grade of paper; the format is good and material is well arranged for easy reference.

There are some typographical errors sueh as a peak level of 50 mgm. (? 150) for true glucose value in glucose tolerance testing. This book, despite its chief shortcoming in "putting over" the diabetic diet, is recommended for internists and others whose praetice includes diabetics, as well as the general practitioner.

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RECURRENT LARYNGEAL NERVES IN THYROID SURGERY—William H. Rustad, M.D., Assistant Clinical Professor of Surgery, U. C. School of Medicine, Charles C. Thomas, Publisher, Springfield, Illinois, 1956. 47 pages, $4.50.

This book is based on a study of a large number of meticulous anatomical dissections of the recurrent laryngeal nerve in cadaver material comprising 125 specimens. It is exceptionally well illustrated by Mr. Ralph Sweet.

It has been the general consensus that there is a great variability between the relationship of the recurrent laryngeal nerve to the inferior thyroid artery. What is not generally known is that the recurrent laryngeal nerve may divide into from one to six (1 to 6) divisions before it approaches the inferior thyroid artery, as demonstrated in the illustrated dissections. This should be of considerable interest and importance to the surgeons who have routinely dissected the recurrent laryngeal nerve before doing a thyroidectomy. One wonders how often a surgeon may have been deceived in believing he had dissected out the entire recurrent laryngeal nerve when actually he had exposed only one of its branches.

This book should be read not only by the surgeon specializing in neck surgery, but also by the general surgeon who may occasionally do neck surgery.

CONRAD J. BAUMGARTNER, M.D.

NEW BASES OF ELECTROCARDIOGRAPHY—Demetrio Sodi-Pallares, M.D., Chief of the Department of Electrocardiography at the National Institute of Cardiology of Mexico, Professor of Cardiovascular Clinics, National University of Mexico; with the collaboration of Royall M. Calder, M.D., Editor, English Translation, Clinical Professor of Medicine, Baylor University. The C. V. Mosby Company, St. Louis, 1956. 727 pages, 520 illustrations, $18.50.

This book from the Institute of Cardiology in Mexico City, is the English translation of a revision of the third Spanish language edition of the book, first published in 1945. The book is a major contribution to the subject of electrocardiography, and in the reviewer's opinion, will prove to be a valuable reference book for research workers in the field, as well as practicing physicians interested in electrocardiology.

A very comprehensive discussion of all aspects of electrocardiology, with the exception of the cardiac arrhythmias, is included in the book. The contributions of the many Mexican workers whose papers have not been available to many American readers are fully discussed and illustrated. The opinions of many European workers, notably Duchosal, Donzelot, Segers, Soulié, and a good many others, are discussed in more detail than in most European or American texts. The wide scope of the literature which Dr. Sodi-Pallares has entwined with his own work can also be seen in the excellent bibliography of almost a thousand references.

In addition to the conventional discussions of electrocardiographic patterns, Dr. Sodi-Pallares has a very complete discussion of congenital heart disease, chapters on the Einthoven triangle, electrophysiology, vectorcardiology, and intracavitary potentials, as well as an appendix illustrating the mathematical derivation of many current concepts. Vectorcardiography is discussed and presented with ample discussion of all the current lead systems.

A minor criticism might be the fact that the book is organized into separate discussion of unipolar limb leads, precordial leads, and intracavitary leads, rather than discussing each electrocardiographic pattern as a distinct entity. As a result, left ventricular hypertrophy, for example, is discussed in several areas of the book, rather than in a compact form.

Dr. Sodi-Pallares' book is full of original observations, summarizes many years of research of his entire group and is not merely a compilation or a simple current summary of the subject. The book is a classic in the field and is welcomed as a major contribution from the Mexican Institute of Cardiology.

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PROCEEDINGS OF THE THIRD NATIONAL CANCER CONFERENCE—Sponsored by the American Cancer Society, Inc., and National Cancer Institute—J. B. Lippincott Company, Philadelphia, 1957. 961 pages, $9.00.

The primary purpose of this and the two preceding National Cancer Conferences which have been held since 1949 is to provide a quadrennial opportunity for clinicians, clinical investigators and research workers to meet and exchange ideas in formal and informal sessions. The published proceedings are a record of the general lectures and of the more formal discussions at the various panels, divided into the following groups: Cancer of the breast, prostate, a joint symposium on cancer of the breast and prostate, symposia on lymphomas and leukemias, chemotherapy in cancer, cancer of the lung, head and neck, female genital tract, gastrointestinal tract, and finally a symposium on end results in the treatment of cancer. The speakers at the Conference represent a cross-section of research workers and clinical investigators both from the U. S. and abroad. The volume thus provides a summary of present activities of investigators in fundamental and clinical cancer research, involving etiology and epidemiology, diagnosis, newer methods of treatment, appraisal of avenues of future efforts in clinical and investigative fields, and an up-to-date summary of the status or curability of cancer by presently available methods.

This volume is the most impressive of the formal record of any of the three conferences, although its publication as a single volume makes it considerably more bulky than the two-volume publications of the Second National Cancer Conference. Nevertheless, the present volume is admirably done, with a profusion of illustrations and graphs, and most of the essayists have provided short but valuable bibliographies indicating recent sources of collateral material.

Some of the more interesting features include the concept of preinvasive carcinoma as a clinical entity, the increasing body of knowledge concerning leukemia and the evidence indicating a viral etiology, and some promising developments in management of cancer by hormonal, metabolic and chemotherapeutic methods.

Wendell Stanley presents a forceful argument for a greater interest in the possibility of the etiology of cancer by viruses, and urges acceptance of this idea as a working hypothesis because it will result in the doing of experiments that might otherwise be left undone, experiments that could result in the solving of this great problem.

A new report on the recent data concerning the curability of cancer from several large registries, including some seventy-five thousand cancer patients with better than ninety-five per cent follow-up, shows that the over-all five years' survival has increased to some thirty-three per cent, although the increase in salvage is entirely in women, with a decrease in over-all survival for males with cancer. Distinct increases in five-year survival were found for cancer of the large intestine, rectum, cervix, corpus uteri and prostate. Some improvement in survival was discovered for cancer of the larynx, breast, kidney, bladder, and some prolongation of life in neoplastic lesions of the blood and lymphatic systems. Little or no improvement was recorded for cancer of the stomach, lung, esophagus, ovary, bone and brain.

In all, this volume represents a record of progress and new findings which is equally valuable for those interested in investigative work and everyday problems in clinical practice.

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PROBLEMS OF AGING—28th Annual Graduate Fortnight, The New York Academy of Medicine—Edited by Robert L. Craig, M.D. Distributed by George Eliot, Medical and Scientific Books, 1302 Second Avenue, New York 21, New York, 1956. 240 pages, $3.50.

This series of lectures covers the range from animal experiments on prolonging life span to psychologic and psychiatric problems of aging; from fluids and electrolytes in the aged to rehabilitation. Most of the essays are by the outstanding American authority in the field. "The Aging Lung," from Nobel Laureate Dickinson Richard is both delightful and profound. The essay on aging and the mind shows that the capacity to deal with intelligence tests reaches its peak at 20, has fallen 45 per cent of the distance to the 12-year-old level by 50, and well below that level by 70 years of age. But much of this is due to loss in speed of mentalization, and it is cheerful to find, in a world where the most vital decisions are now in the hands of men over 65, that "comprehension, reasoning and judgment appear to be maintained at a relatively constant level as long as mental work and intellectual interest are continued." These essays provide much useful information for physicians of all ages, in a form readily comprehended and, in some of the lectures, most agreeably told.

THE MERCK MANUAL OF DIAGNOSIS AND THERAPY—9th Edition—Editorial Board: Charles E. Lyght, M.D., Editor; William P. Boger, M.D., George A. Carden, M.D., Augustus Gibson, M.D., Dickinson W. Richards, M.D. Merck & Co., Inc., Rahway, N. J., 1956. 1870 pages, Regular Edition: $6.75 (Fabrikoid binding), DeLuxe Edition: $9.00 (flexible Cordoba Fabrikoid binding with gold edged pages).

The opening sentence of the Foreword states that "Ever since publication of the first edition in 1899 the Merck Manual has been designed to provide physicians with reliable, up-to-date medical information in convenient, concise, yet adequate form." Over 100 leading clinicians, who remain anonymous except for the five member editorial board contribute to "the exacting task of presenting the latest medical progress and currently accepted practice." Few single volume medical compendiums more nearly approach the above ideal for this ninth edition, yet it is an exaggeration to suggest that the information is adequate. The ninth edition of 1870 pages is not larger in content than the eighth edition of 1592 pages since it has fewer words per line and fewer lines per page, due to increased spacing between letters, words and lines; in fact there are approximately 20,000 fewer words. The paper also is thinner.

The contents are divided into three parts. Part I supplies basic information concerning the nature of diseases from Allergy to Venereal, with diagnostic procedures, treatment and a list of prescriptions for each disease or disease category. There is even a section on obstetrics with an outline of pre- and postnatal care, threatened abortion and the conduct of a normal delivery. The section on physical and chemical etiology discusses burns, sunburn, heat stroke, radiation sickness and chemical poisoning in carefully selected, brief statements; a few errors, such as the omission of methylene blue as an agent for treating methemoglobinemia and the use of dimercaprol rather than its glycoside for cadmium poisoning should be corrected.

Part II includes various general and specific directions for managing the sick and Part III is the index.

* * *

ULTRAMICRO METHODS—For Clinical Laboratories—Edwin M. Knights, Jr., M.D., Associate Pathologist, Director of Clinical Pathology and Blood Bank; Roderick P. MacDonald, Ph.D., Director of Clinical Chemistry; and Jaan Ploompuu, Chief, Division of Ultramicro Chemistry, all of Harper Hospital, Detroit. Grune & Stratton, New York, 1957. 128 pages, $4.75.

The development of practical methods for analyses of the chemical constituents of blood and urine has contributed immeasurably to the diagnosis and treatment of disease. However, the number and frequency of the determinations which can be made on the blood may be seriously limited by the amounts of sample required. This limitation is most evident in pediatric practice but it may well be a factor in the management of other patients in whom repeated venipuncture is difficult or undesirable. Consequently, there is increasing demand for analytical methods for use on blood, which require such small samples that the blood may be obtained by pricking the heel or finger. Such "ultramicro" methods permit the measurement of microgram (0.001 mg.) or microliter (0.001 ml.) quantities of material. An individual test may require only 0.01 to 0.03 ml. of serum and 0.2 to 0.3 ml. of blood thus suffices for the determination of several different substances.

In this book, detailed and specific directions are given for the determination of the electrolytes of the blood—sodium, potassium, calcium, chlorides, phosphate, and carbon dioxide combining power—and for certain organic compounds which are most frequently requested. These latter include urea nitrogen, glucose, cholesterol, and the serum proteins. Methods are also given for acid and alkaline phosphatase, bilirubin, icterus index, and thymol turbidity and cephalin flocculation tests. There is also a section on what is termed "electrochromatography" which deals with electrophoretic determination of serum protein fractions on filter paper but which, unfortunately, neglects the use of this same technique for the identification of the abnormal hemoglobins. Other methods described are the C-reactive protein test, microflocculation tests for syphilis, and microhematocrits. The determination of chlorides and of protein in spinal fluid is also included.

The first section of the book is devoted to a discussion of the necessary steps in setting up an ultramicro chemical section in the general clinical laboratory including a listing of the special apparatus required. Attention is devoted to the collection of blood and the pipetting of samples. Each chemical method which is subsequently described is treated by, first, a brief discussion of the principles which underlie the method, then a list of the required apparatus and reagents, followed by the details of the procedure including calculation of the results and the normal values to be expected. A useful discussion and specific references for each procedure are to be found at the end of each method. The book contains a number of illustrations and its printing and general format are very satisfactory. It should serve very adequately as a guide in the clinical laboratory desirous of establishing an ultramicro section for analyses of blood and spinal fluid.

HAROLD A. HARPER, Ph.D.

* * *

ALCOHOLISM—Edited by George N. Thompson, A.B., M.D., F.A.C.P., Associate Clinical Professor of Neurology and Psychiatry, School of Medicine, University of Southern California, Los Angeles. Charles C. Thomas, Publisher, Springfield, 1956. 548 pages, $9.50.

The whole subject of alcoholism, chronic and acute, is covered by this book. The field is very broad, ranging from sociology to chemistry, and for this reason has been properly assigned to a number of contributors. Thus there is a considerable difference in adequacy of coverage in the various fields, which is inescapable in this type of treatment of a subject. Especially to be commended are the chapters on the Pharmacology of Alcohol by Harger, and Alcohol and Brain Physiology by Himwich; the book would be well worth while if it contained nothing else. It is to be recommended for careful reading by all physicians who have any contact with alcoholics, which in the last analysis means all physicians.

* * *

THE PHILOSOPHY OF MEDICINE—William R. Laird, M.D., Education Foundation of West Virginia, Inc., P. O. Box 1167, Charleston 24, West Virginia. 64 pages, $3.00.

This is a rather interesting compilation of quotations from famous men, and from others less famous, combined with a personal statement of one man's concept of the practice of medicine.

Most of the quotations are well known by most doctors and the altruistic attitude of the author in regard to medicine is that of most doctors.

Many of the author's conclusions concerning the value of statistics and minutely detailed records and the need for universal autopsy in all deaths will be discounted by many of our excellent physicians and pathologists.

The author's eulogy of some men as benefactors and noble statesmen will not be appreciated entirely by all readers. Some of the men whose names are mentioned do qualify but other names fall short of the target.

The book adds little to the knowledge and philosophy of the educated doctor. It will be misinterpreted in many aspects by the nonmedically trained casual reader.

SURGERY IN WORLD WAR II—Vascular Surgery—Edited by Daniel C. Elkin, M.D., and Michael E. DeBakey, M.D., Office of the Surgeon General, Department of the Army, Washington, D. C., 1956, U. S. Government Printing Office. 465 pages, $4.25.

SURGERY IN WORLD WAR II—General Surgery—Volume II (Volume I is to be published later)—Colonel John Boyd Coates, Jr., M.D., Editor in Chief; Michael E. DeBakey, M.D., Editor for General Surgery. Office of the Surgeon General, Department of the Army, Washington, D. C., 1955, U. S. Government Printing Office, Washington 25, D. C., 1956. 417 pages, $4.25.

SURGERY IN WORLD WAR II—Orthopedic Surgery in the European Theater of Operations—Colonel John Boyd Coates, Jr., M.D., Editor in Chief; Mather Cleveland, M.D., Editor for Orthopedic Surgery. Office of the Surgeon General, Department of the Army, Washington, D. C., 1956, U. S. Government Printing Office, 397 pages, $4.00.

After a number of years and much work the Army has published three books on surgery in World War II.

The first encompasses experience in vascular surgery in the field, giving excellent statistical references as to the frequency of different kinds of injuries and the prognosis with each. There is also a section on posttraumatic vasomotor disturbances which is of considerable interest. The section on arterial repair is based upon experience at the very end of the war and, in fact, after the war was over, and has since been improved upon by the experience in Korea. However, the principles are well documented and when combined with the recent publications on the Korean experience give one a clearcut view of what can be accomplished in the field of vascular surgery under those conditions.

The second deals with general surgery in which a great deal of space is devoted to resuscitative measures, anesthesia, and the general principles connected with managing the severely wounded. These chapters are well documented, with case reports, and are written in such straightforward language as to make good reading for anyone having to deal with the severely injured. There are good statistics on visceral injuries showing the frequency of involvement of various organs and the prognosis. Of real practical value is the section on large bowel injuries which in clear form illustrates the best method of management.

The third of the three books deals with orthopedic surgery in the European Theater of Operations and also has some very good chapters on the function of consultants and the distribution of the training of personnel in various types of service hospitals. The most practical aspects of this volume have to do with the management of contaminated multiple fractures in which the principle of delayed closure and debridement is emphasized. Many of the invaluable lessons of World War I which were not put into print in any form at that time are now incorporated in this volume so that future generations of traumatic surgeons will have before them the data essential for the proper management of this type of injury. Anyone having to deal with severe industrial injuries or traffic accidents can find many useful bits of information in this volume.

FRANK GERBODE, M.D.

* * *

CLINICAL MEMORANDA ON ECONOMIC POISONS—U. S. Department of Health, Education and Welfare, Communicable Disease Center, Atlanta, Georgia. Available by Request from the National Agricultural Chemicals Association, 910 - 17th Street, Washington 6, D. C.

With about $250,000,000 worth of agricultural poisons sold in the United States (one-fifth of this in California) in 1956, the physician must be constantly alert to the possibility of poisoning among not only the manufacturers and users, but also among children who may have access to containers. Because of this constant hazard to health and life, the Technology Branch of the Communicable Disease Center of the United States Public Health Service, located in Savannah, Georgia, in collaboration with the Center in Wenatchee, Washington, has prepared this booklet for the information of physicians.

The first edition was published in 1950, and it has been revised as needed. The index is placed in the front of the booklet and contains the synonyms as well as the nonproprietary and chemical names of the compounds. In the introduction it is stated that the Technical Development Laboratories of the Technology Branch conduct laboratory, field, and clinical studies to determine the toxic hazards to man involved in the use of economic poisons in public health and agriculture. The booklet is based largely upon these studies.

The introduction suggests special means of clinical and laboratory diagnosis of cases suspected of poisoning and general methods for treatment and reporting of such cases. If available laboratories are not equipped to make necessary special analyses, material may be sent to the Public Health Laboratories in either Savannah or Wenatchee, and in appendices at the back of the booklet are directions for preparing material for shipping. In the main text of the booklet, economic poisons are listed under the five main headings: Organic Phosphorus Insecticides; Chlorinated Hydrocarbon Insecticides; Solvents; Rodenticides and Miscellaneous. The chemical groups as well as each individual compound are discussed under the following headings: Chemical name and formula; commercial formulations; uses; physiological actions; dangerous acute and chronic doses to man (and often to animals); signs and symptoms of poisoning in man; laboratory findings; pathology; differential diagnosis; treatment and reporting.

Although the entire booklet consists of but 78 pages and the index and title page, it is comprehensive and adequate for most purposes of the physician. It is clearly written, accurate and soundly based on clinical as well as laboratory experience. Clinical Memoranda on Economic Poisons should be in every doctor's library.

* * *

EXAMINATION OF THE NERVOUS SYSTEM—A Student's Guide—A. Theodore Steegmann, M.D., Professor of Medicine (Neurology), University of Kansas School of Medicine, Kansas City, Kansas. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1956. 164 pages, $3.75.

This little pocket volume on the technique of neurological examination is just what a good many medical students have been asking for. In the transitional period between preclinical and clinical years, usually at the second year level, the student often finds himself with a great bag of anatomical tricks and absolutely no idea as to how to make them work at the bedside. Dr. Steegmann's concise guide is created specifically for this situation and, fortunately, does not include all the minutiae and eponyms often found in neurologic texts.

The book is fairly well illustrated with drawings and photographs relating to cranial nerve dysfunctions which are so difficult for the novice. In addition, clear charts are provided to show all the reflex centers and levels, sensory innervations, and imbalances of the extraocular muscles. For once a clear description (illustrated) is given of the technique for eliciting the plantar reflexes.

The constant reference to the central nervous system as a three-dimensional body both clinically and anatomically will help the student to integrate neuroanatomy and physiology with what he sees at the bedside.

W. W. HOFMANN, M.D.

INTERNAL MEDICINE—A Physiological and Clinical Approach to Disease—Robert P. McCombs, B.S., M.D., F.A.C.P., Professor of Graduate Medicine, Tufts University School of Medicine. The Year Book Publishers, Inc., Chicago, 1956. 706 pages, $10.00.

As a means of handy, quick reference, or rapid review in the field of Internal Medicine this small volume should be of considerable value to most physicians. Dr. McCombs has made no attempt to write another textbook of medicine, but instead presents a "summary of the most important clinical facts, physiologic concepts, diagnostic methods, and therapeutic measures of use in the study and management of internal diseases." In this he succeeds very well.

As might be expected emphasis is placed on newer diagnostic procedures and therapies, but an adequate balance is maintained with traditional though still valid medical concepts. This, the chapter on pulmonary diseases is introduced with a concise review of pulmonary function studies and pulmonary physiology, following which several paragraphs are devoted to the importance of sputum in diagnosis including even mention of the importance of elastic tissue in lung abscess. A full chapter is devoted to body fluid and electrolytes. It is simply and clearly written, yet gives an adequate review of the subject for most clinical situations. The subject of infectious diseases is prefaced by almost 30 pages of pertinent discussion of immunity, resistance, hypersensitivity, and fever, and a review of all available antibiotics.

The main criticism of this volume, as with any digest, is its brevity. Much that any individual physician might consider to be important has been omitted. (The subject of congenital heart disease, for example, has been disposed of in two and one-half pages.) Yet on the whole, an ample amount of pertinent and up-to-date information on the medical diseases is presented for quick reference by the internist, the general practitioner, and even the surgeon. This book is especially recommended for the physician's office and the hospital library.

* * *

HEART SOUNDS, CARDIAC PULSATIONS, AND CORONARY DISEASE—William Dock, M.D., Professor of Medicine, State University of New York, College of Medicine. University of Kansas Press, Lawrence, 1956. 98 pages, $2.50.

In this volume there are published the Porter Lectures of 1955, on the topics indicated by the title. At first glance disconnected from each other, the lectures are the closely interwoven records of years spent in the study of the heart at many bedsides and as a "guest worker" in several laboratories. Thus, the genesis of heart sounds is explained in part by observation of cardiac pulsations, and both sounds and pulsations afford indications of the presence of coronary disease.

The present wide interest in ballistocardiography stems from Dock's original demonstration that an inexpensive, simple, homemade device could replace costly and cumbersome apparatus. Clinical applications of the ballistocardiogram, or the "big pulse," are explored in the first chapter, together with its genesis and relation to local pulses.

The second chapter describes the production of sounds by normal and diseased hearts. Their valvular origin, long championed by Dock, is confirmed by simple experiments performed under the stimulus of the Porter lectureship and here reported for the first time. The significance of first and second sounds, gallop, click, opening snap, etc., is discussed with authority.

"Coronary Disease—the Professor's Friend" is fittingly the closing subject. Here again, the author has been intimately concerned for many years with the overwhelming evidence for the role played by exogenous cholesterol in the pathogenesis of atherosclerosis. This is discussed incisively, together with appropriate remarks on nicotine and the sedentary life as factors in causation; "confinement to quarters" rather than prolonged rest in bed is supported as treatment.

Cardiologist, internist, physician and student will each profit from this pithy volume. It is required reading.

DAVID A. RYTAND, M.D.

* * *

PSYCHOLOGICAL ASPECTS IN THE CARE OF INFANTS AND CHILDREN—Pediatric Research Conference—Ross Laboratories, Columbus 16, Ohio, 1956. 90 pages, no charge.

This is a report of the twenty-first Ross Pediatric Research Conference, which was held under the auspices of the Department of Pediatrics of the Yale School of Medicine, at New Haven, March 13 and 14, 1956, under the chairmanship of Milton J. E. Senn, M.D., Sterling Professor of Pediatrics and Psychiatry at Yale. There were thirty-one participants in the conference, twenty-nine of whom were pediatricians, several being trained also in child psychiatry. Two were psychiatric social workers, and the fields of public health, physiology, child development were also represented.

The content of the booklet pertains largely to the psychological aspects of pediatric practice and its problems, but considerable discussion, also, is devoted to the training of pediatricians in the psychological aspects of pediatric practice. There are leading discussions of the psychological aspects of pregnancy, the mother-infant relationship and infant development, the psychological approach to the interview and physical examination, plans for integrated pediatric-psychiatric learning, the role of the case worker in pediatric teaching and practice, and descriptions of several experiments relating to comprehensive pediatric care, together with a considerable inclusion of the spontaneous comments and contributions of the various participants.

The discussions are by leaders in the field which is sometimes called pediatric-psychiatry and should be of interest to pediatricians and general practitioners who wish to play the role which they can in the fostering of mental health in childhood.

HALE F. SHIRLEY, M.D.

* * *

CHILDREN'S EYE PROBLEMS — Emanuel Krimsky, M.D., Attending Staff in Ophthalmology, St. John's Hospital, Long Island City. Grune & Stratton, Inc., New York, 1956. 175 pages, $6.00.

According to the author, the aim of the book is to provide the pediatrician and the general practitioner with a practical, usable guide to the understanding of the eye problems of children. The contents of the book are divided into an Introduction, which includes the eye and its development, normal ocular phenomena; Examining the Child, Eye Disorders Mainly of Local Origin; Other Eye Disorders; Eye Disorders of Systemic Origin; and Problems in Management.

The book is primarily a detailed outline of the subject with insufficient data, in most instances, to be of any help to the pediatrician or general practitioner. For example, a better account of the changes that occur in the development of retrolental fibroplasia together with the occasional case in which there is regression and the findings in these cases, would have been of more value than some of the material now included. In some instances, the data given are too complicated to be interpreted by anyone not trained in ophthalmology. There was also evidence of authors being misquoted.

Chapter II, or "Examining the Child," is probably the best part of the book. As to the book, itself, the format is excellent, illustrations are unusually good, and the reproductions are outstanding.

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KEY TO ABBREVIATIONS USED

(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (MJ)—Medical Jurisprudence.

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"For prompt relief [of nausea during pregnancy] the use of Dramamine is recommended (50 mg. twice daily tapering off rapidly to use only as required)."

Consultation Service: Treatment of Nausea During Pregnancy, Postgrad. Med. 7:383 (May) 1950.

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Health Problems Occurring from Household Chemicals, Including Drugs

(Continued from Front Advertising Section, Page 60)

(1) encourage informative labeling and safe packaging; (2) stimulate laboratory and clinical research for antidotes; (3) standardize technical nomenclature; (4) develop criteria for evaluating hazardous substances; and (5) sponsor a sustained educational program.

The American Public Health Association has recently established a subcommittee on chemical poisons, which will concern itself with the role of organized public health activities in the prevention and control of accidental poisoning. It will study the problem in all age groups, and its activities will include case-finding, analysis of the factors involved in the etiology, studies of methods of treatment, and the development of a program of prevention and control.

As an informational guide to parents, physicians, hospitals, poison control centers, and others concerned with the prevention of accidental poisoning, the FDA has recently issued a circular titled Protect Your Family Against Poisoning. This provides a series of reminders regarding the handling and storage of drugs, poisons, and other household chemicals.

SUMMARY

Throughout the country during the past five years, increased interest in poisoning in the home has produced considerable progress toward the solution of the problem. Much more cooperative effort must be expended, however, in (1) extending our knowledge as to the identity and nature of hazardous substances, including methods of diagnosis and treatment of poisoning arising from them; (2) promoting safe labeling and packaging of household chemicals; (3) restricting from the home environment substances whose hazardous natures outweigh their usefulness; and (4) educating the consumer in the safe use and storage of all nonfood substances.

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From The Journal of the American Medical Association
April 6, 1957, Vol. 163
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Reprints of this report may be obtained by writing to the Committee on Toxicology, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

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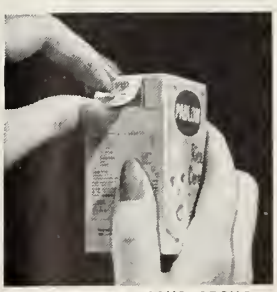

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Hyaluronidase Reduces Fracture Swelling

(Continued from Front Advertising Section, Page 38)

this compound fracture case. In fact, within 30 to 60 minutes after hyaluronidase was injected into the injured area, the swelling of the leg and foot had been reduced to a point where it was possible to close the surgical opening.

The doctors concluded that closing the incision would have been impossible without hyaluronidase. Closure was important since it helped return a normal blood supply to the foot.

Dentistry of Tomorrow

Permanent teeth really will be permanent for most of the children growing up in the 1960s and a trip to the dentist then will be quite different from one today, an American Dental Association official has predicted.

Peter C. Goulding, secretary of the American Dental Association's council on scientific session, said tooth decay will become less and less a problem as the full effects of fluoridation and other preventive

(Continued on Page 74)

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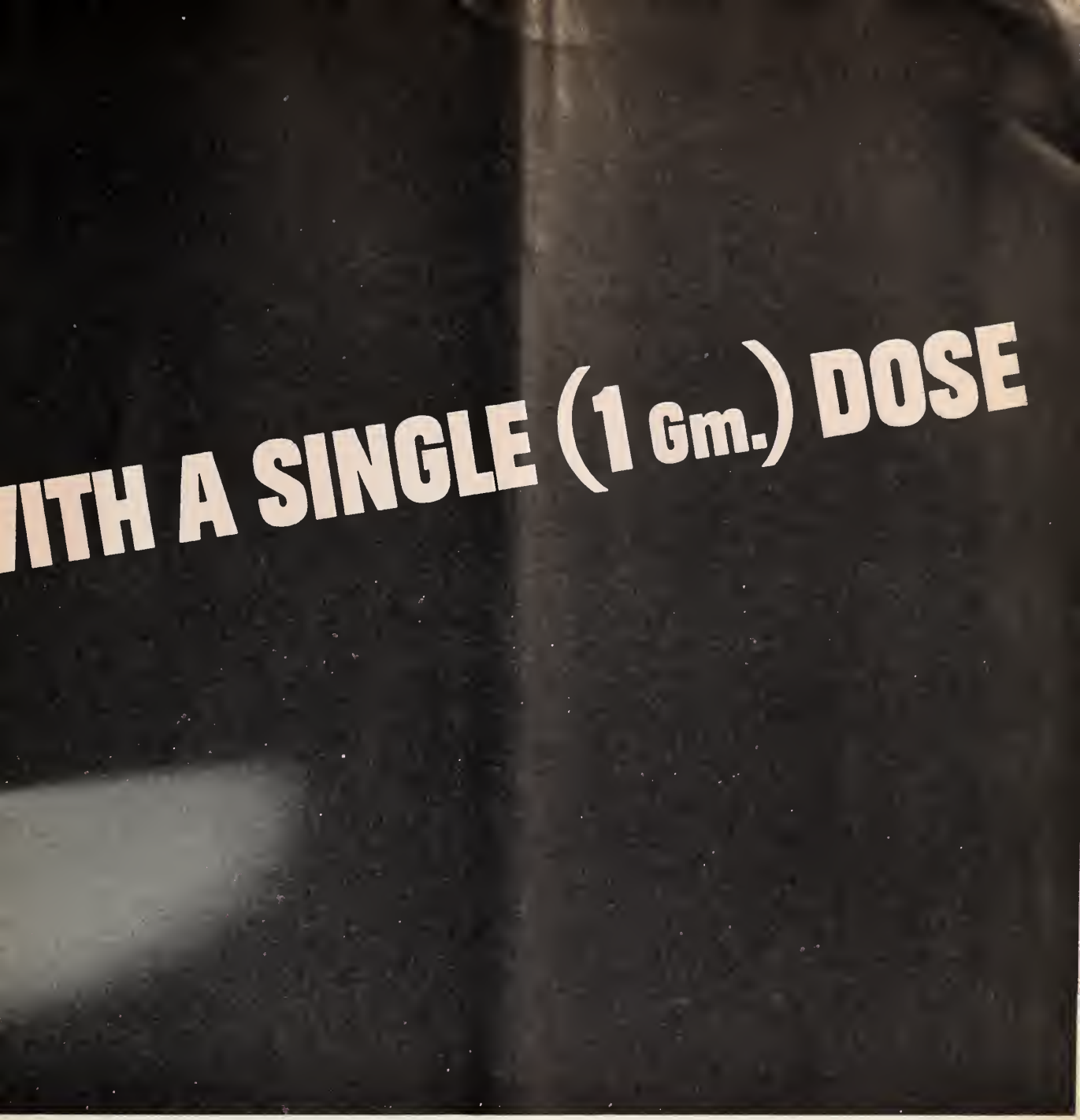

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rup: Each teaspoonful (5 cc.) of caramel-vored syrup contains 250 mg. of sulfa-ethoxypyridazine. Bottle of 4 fl. oz.

Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: ibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

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DERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK Lederle

Dentistry of Tomorrow

(Continued from Page 70)

measures are realized. Then other dental disorders will receive most of the dentist's attention.

Writing in a recent issue of *Today's Health*, the American Medical Association's consumer magazine, Goulding pointed out that the major cause of tooth loss is periodontal disease, the disorders that attack the gums and other dental supporting tissue. Even if a person's teeth survive the onslaught of decay, they usually are lost in later life because of periodontal disease.

Dentists now spend 40 per cent of their time repairing the ravages of decay, but in 10 years they will be spending most of their time on prevention of disease and the rehabilitation of mouths damaged by disease. People will be having more appointments at less cost and without the pain and discomfort "so often and so mistakenly associated with dental treatment," he said.

Fear of pain is probably the chief reason why only 45 per cent of the public sees a dentist each year. Yet even today's anesthetics, treatments, and particularly the newly developed high-speed drills make this fear largely groundless.

By 1967 several other developments now in the

(Continued on Page 78)

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Basic Principles in General Surgery, Two Weeks, July 8
Surgical Anatomy & Clinical Surgery, Two Weeks, September 30
General Surgery, Two Weeks, September 23
Gallbladder Surgery, Three Days, June 24
Surgery of Hernia, Three Days, June 27
Treatment of Varicose Veins, September 9
Fractures & Traumatic Surgery, Two Weeks, June 17

GYNECOLOGY & OBSTETRICS—
Office & Operative Gynecology, Two Weeks, September 16
Vaginal Approach to Pelvic Surgery, One Week, September 9
General & Surgical Obstetrics, Two Weeks, September 30

MEDICINE—Electrocardiography & Heart Disease, Two-Week Basic Course, July 8

RADIOLOGY—Diagnostic X-Ray (the formal course) Two Weeks, September 16
Diagnostic X-Ray, Clinical Course, by appointment
Radium Therapy, One Week, June 24

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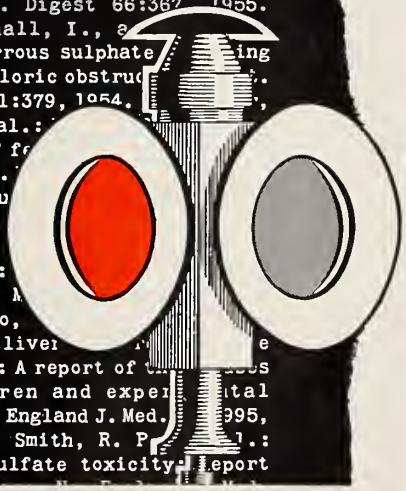

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high content of B vitamins, including pyridoxine, makes this formula especially useful during pregnancy

a. Franklin, M.: To be published. b. Rohse, W. G., and Kemp, C. R.: A study of the relative toxicity of iron choline citrate. To be published.

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Dentistry of Tomorrow

(Continued from Page 74)

research stage will make dental treatment better and even more comfortable.

Remineralizing agents may be routinely applied to the teeth to repair weakened enamel before cavities can start. Effective antienzyme agents may be in routine use to prevent decay. Filling materials now being tested may be perfected. One would stimulate in the repaired tooth the formation of secondary dentin, the substance underneath the enamel layer, while another would "grow" to the tooth surface and actually help ward off future decay.

A radically new x-ray machine, already used experimentally, is likely to be in general use. Called the panoramic x-ray, it revolves around the patient's mouth, taking a picture of all the teeth on one film.

Even the future office and type of practice will be greatly changed, Goulding said. Instead of one man working alone in a small office, almost all dentists will have one or two assistants. A large number will be practicing with groups of specialists. In such an office, an over-all plan of treatment would be outlined for the patient, with each specialist giving treatment in his field.

(Continued on Page 94)

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Reason Found for One Type Of Sudden Death

Why a seemingly trivial disorder can break into a raging infection that ends in death within a few hours is a question which has baffled physicians for years.

But recently reported work by physicians and laboratory scientists has given at least a partial answer to this "dilemma of death without explanation," and has provided a way of combating it in some cases, according to an article in a recent issue of *Today's Health*, the American Medical Association's consumer publication.

The center of the problem is gamma globulin—or rather the lack of it in the body, Dr. W. W. Bolton, Chicago, associate director of the A.M.A.'s bureau of health education, said. Without this blood factor, the body has no defense against constant infection.

Luckily this lack of gamma globulin, known technically as agammaglobulinemia, is not a common occurrence, Dr. Bolton said.

Gamma globulin is the protein fraction of the blood serum that provides protection against disease because it carries special antibodies. Agammaglobulinemia—caused by a recessive hereditary trait—is the failure of special plasma cells in the bone marrow to produce this blood fraction. Just why these cells fail to function has not been determined.

Gamma globulin became well known through its use for temporary protection against polio. It is frequently given to lessen the severity of measles and some other diseases. Used in this way, it provides a passive and temporary immunity to disease. When a person actually has a disease, he develops antibodies against it. These are carried in his serum gamma globulin, usually for the rest of his life.

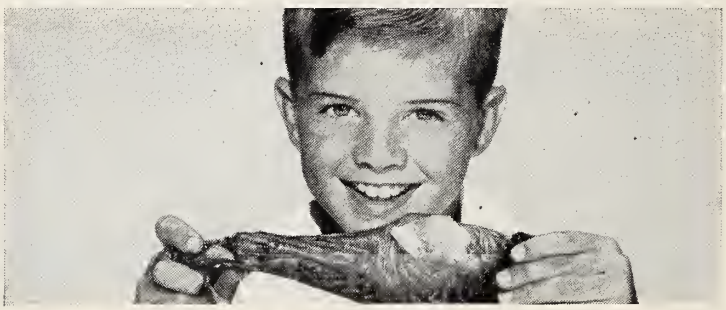
Gamma globulin can be extracted from donated blood, pooled, and later given in concentrated form to persons lacking it.

However, gamma globulin may not always help protect against infection, Dr. Bolton said. The cause of the illness may be a condition to which most of the population is rarely exposed and the pooled gamma globulin will not contain antibodies to fight it. In other cases the infection may spread too rapidly for the gamma globulin to take effect.

Dr. Bolton noted that some individuals have been found who have only a partial deficiency. Then regular shots may help protect them. The condition is usually seen in children, but it has been reported in a 39-year-old woman who had many infections. Regular treatment with gamma globulin ended her difficulties.

If accumulating evidence shows that agammaglobulinemia may be more prevalent than is now be-

(Continued on Page 94)



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PHYSICAL EXAMINATION IN HEALTH AND DISEASE—New Second Edition—Rudolph H. Kampmeier, A.B., M.D., Professor of Medicine, Vanderbilt University School of Medicine. F. A. Davis Company, Philadelphia 3, Pa., 1957. 774 pages, $9.50.

PHYSIOLOGIC PRINCIPLES OF SURGERY—Edited by Leo M. Zimmerman, M.D., Professor and Chairman of the Department of Surgery, Chicago Medical School; and Rachmiel Levine, M.D., Chairman, Department of Medicine, University of Chicago. W. B. Saunders Company, Philadelphia, 1957. 988 pages, $15.00.

PRACTICE OF MEDICINE, THE—Editor Jonathan Campbell Meakins, C.B.E., M.D., LL.D., D.Sc. Sixth Edition. The C. V. Mosby Company, St. Louis, 1957. 1916 pages, 318 illustrations, $16.00.

PRINCIPLES AND ART OF PLASTIC SURGERY, THE—Sir Harold Gillies, C.B.E., F.R.C.S., and D. Ralph Millard, Jr., M.D., Assistant Clinical Professor of Plastic Surgery, University of Miami, Florida. Little, Brown and Company, 34 Beacon Street, Boston, 1957. In Two Volumes, Boxed. 690 pages, 2472 illustrations, 122 in color, $35.00.

PRINCIPLES OF UROLOGY—An Introductory Textbook to the Diseases of the Urogenital Tract—Meredith F. Campbell, M.S., M.D., F.A.C.S., Emeritus Professor of Urology, New York University. W. B. Saunders Company, Philadelphia, 1957. 622 pages, 319 figures, $9.50.

RADICULAR SYNDROMES—With Emphasis on Chest Pain Simulating Coronary Disease—David Davis, B.S., M.D., The Year Book Publishers, Inc., 200 East Illinois, Chicago, 1957. 266 pages, $6.50.

RIDDLE OF STUTTERING, THE—C. S. Bluemel, M.D., The Interstate Publishing Company, Jackson & Van Buren, Danville, Illinois, 1957. 142 pages, Hard bound, $3.50; Paper bound, $1.50, Accompanying 4 therapy records, $3.00.

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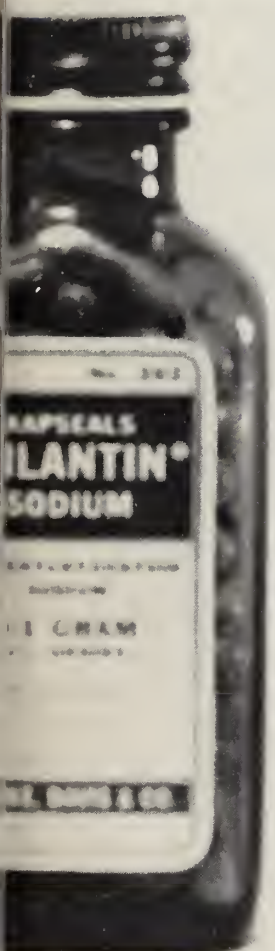

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1. Zimmerman, F. T., and Burgemeister, B.: *Arch. Neurol. & Psychiat.* 72:720, 1954.
2. Zimmerman, F. T., and Burgemeister, B.: *J.A.M.A.* 157:1194, 1955.
3. Zimmerman, F. T.: *Arch. Neurol. & Psychiat.* 76:65, 1956.

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(Continued from Front Advertising Section, Page 60)

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Names of Classified Advertisers cannot be supplied. Address your reply to the box number c/o **California Medicine**, and it will be immediately forwarded to the Advertiser.

Standard Nomenclature Gives Physicians a Common Language

You may think you have poison ivy and your doctor may even tell you that you do, but when he records his diagnosis, he will call it "dermatitis venenata."

What you call "athlete's foot" he'll call "dermatophytosis." And his secretary will simply file it as "112-211."

This may look like a method for confusing the patient and making a mystery of something simple, but it isn't. The patient isn't the only one who has been confused by terminology; so have the doctors. Calling athlete's foot "112-211" is one result of years of effort to give them a common language.

It's called the *Standard Nomenclature of Diseases and Operations*, which is published as a book by the American Medical Association. It is now used by more than 85 per cent of American hospitals, and has wide foreign distribution. It is also used in private physicians' offices, medical clinics, medical schools and libraries, and even for indexing medical motion pictures and literature.

In order to help people working with the system learn to code and to gain a better understanding of anatomy, the American Medical Association periodically sponsors regional Nomenclature institutes. One will be held August 5-7 in San Francisco. The Institutes are conducted by the editor of the book, Dr. Edward T. Thompson, United States Public Health Service, Washington, D. C., and Mrs. Adaline C. Hayden, Chicago, Certified Record Librarian and associate editor of the Nomenclature.

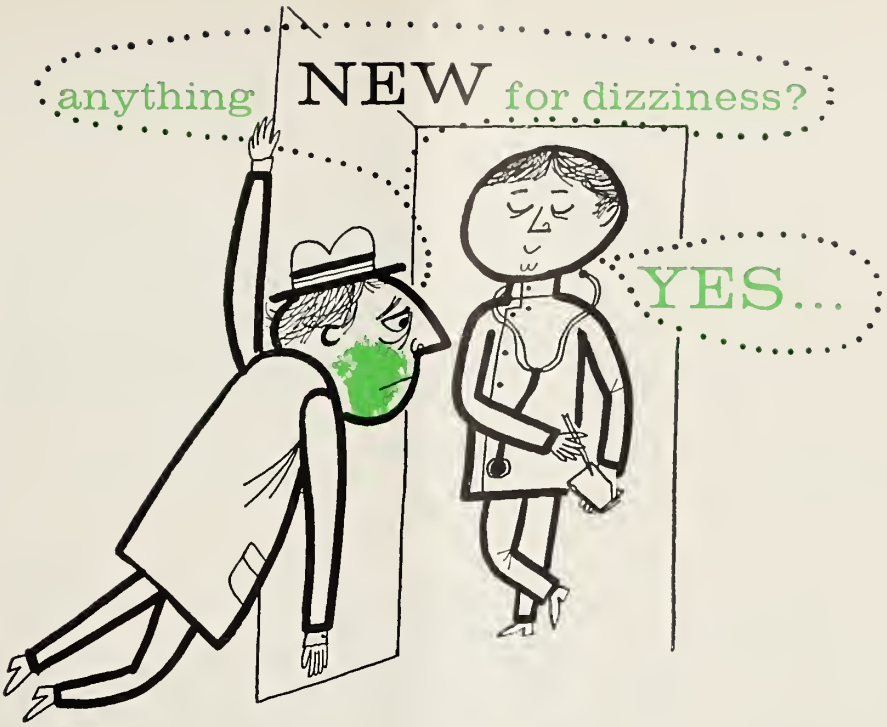
While the Nomenclature contains more than 16,000 medical terms, they're in good order and anyone with the key can tell quickly just what phlegmasia alba dolens (or 090-522.8) is. It's what may be called "milk leg" or "white leg." This may be colorful but it isn't very accurate.

The *Standard Nomenclature* is similar to the Dewey Decimal System used in almost all libraries. By a series of numbers it narrows a term down from a broad category to a specific part of the body, tells just what is wrong there and what caused it.

The numbers on the left side of the hyphen show where the disease is; those on the right show what caused it or what type of operation was or should be performed.

Thus athlete's foot or dermatophytosis is 112-211. Reading it as the numbers accumulate: 1 means diseases of the integumentary system; 11, the skin proper; 112, specifically the epidermis; -2 means diseases or infections due to fungus or animal parasites; -21, the hyphomycete group of fungi, and -211 the particular fungus, the Trichophyton. Taken all together they spell dermatophytosis. By no means could this be mistaken for skin rash due to strawberries, or poison ivy. Poison ivy would be 110-3001. The 1 indicates it's a disease of the skin but

(Continued on Page 98)



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1. Weil, L. L.: J. Florida Acad. Gen. Pract. 4:9 (July) 1954. 2. Williams, Henry L.: J. Michigan State Med. Society 51:572-576 (May) 1952.

Dentistry of Tomorrow

(Continued from Page 78)

The payment of dental costs probably will be different. Instead of the current post-payment plans that spread the expenses over one or two years, there probably will be prepayment plans such as are now available for medical expenses.

There will be fewer dentists, proportionately, than there are now, but they will treat more patients—perhaps 100 million in 1965 as compared with 75 million in 1955. And dental costs will be less over a lifetime than they are now, mainly because the emphasis will be on prevention and rehabilitation, he concluded.

Reason Found for One Type Of Sudden Death

(Continued from Page 84)

lieved, it is possible that routine testing of infants to determine the gamma globulin content of their blood might be instituted, Dr. Bolton said. However, since it is still considered rare, such a test should not be done unless a specific inheritance factor is suspected.

Present information indicates there is little likelihood that this unusual blood deficiency will ever become a widespread problem, but for those patients with it, these new developments are of tremendous importance, Dr. Bolton concluded.

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Dioctyl Sodium Sulfosuccinate	40 mg.
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Standard Nomenclature Gives Physicians a Common Language

(Continued from Page 90)

from there on it separates itself from athlete's foot in no uncertain terms.

There's little margin for error. For instance, a physician taking care of a patient who had moved from another town could look at the records and find that the patient once had suffered from a stomach ulcer. If the system is used properly, there's little chance he would confuse this with a duodenal ulcer, which is in a different place entirely.

Once upon a time, this could have happened. This was particularly true with diseases which were named after the men who discovered them. Sometimes there might be as many as six different diseases bearing—in one form or another—the same man's name. In fact, there might be two or more men with the same name for whom entirely different diseases were christened. To avoid this confusion the *Standard Nomenclature* has ruled out men's names. It names diseases by the site they affect and by what causes them.

With these revisions and with new diseases and operations constantly being reported, the *Standard Nomenclature* has to be kept current. In the 1952 edition, for instance, there were more than 5,800 changes. The book has been revised five times since it was first published in 1933.

One of the big jobs it has done is to cut down the number of terms the physician must wade through for the right one. There are more than 2,000 terms that refer to tumors—many inaccurate or duplicating. Only 210 are preferred and that's all that appear in the Nomenclature itself. All others are listed in the index with a reference to the preferred term.

The words in the Nomenclature itself are the correct terms that are most acceptable to the majority of physicians as shown by surveys of the current medical writing. The editors work with 23 committees composed of recognized authorities in their fields. These committees are appointed by the editorial board, which is appointed by the American Medical Association Board of Trustees.

Members of the editorial board, which will serve until the next edition is published in 1960, are Selwyn D. Collins, Ph.D., Division of Public Health Methods, U. S. Public Health Service, Washington; Dr. Edwin L. Crosby, director of the American Hospital Association, Chicago; Dr. Austin Emith, editor of the *American Medical Association Journal*, Chicago; Dr. Richard Plunkett, associate director, Joint Commission on Mental Illness and Health, Cambridge, Mass.; Dr. Thompson, and Mrs. Hayden. The chairman is Dr. George Baehr, Health Insurance Plan of Greater New York, who spearheaded the standardization movement in 1928.

As use of the book spreads, Mrs. Hayden receives

(Continued on Page 102)

fire!

STERANE® *may not help him flush a covey, improve his aim or even help him bag a sitting duck... but* STERANE *can help steady your rheumatoid patient's hand and improve his position in almost any activity or profession by reducing joint pain, swelling and immobility. Provides prednisolone, the most active systemic corticoid, as white, scored 5 mg. tablets (bottles of 20 and 100) and pink, scored 1 mg. tablets (bottles of 100).*

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Standard Nomenclature Gives Physicians a Common Language

(Continued from Page 98)

more and more requests, now averaging about 400 a month. Many of them are from record librarians who don't think a physician should use a term such as "black eye." He shouldn't. It's not in the book; neither is "bruise," which means about the same thing. He should say "contusion" and specify the site.

But if this sounds like hair splitting, the editors of the *Standard Nomenclature* do make allowances for a physician's human side. One of the latest terms added to the index as a cause of death is simply "fright."

In the body of the book, death due to fright is properly termed "psychophysiologic cardiovascular reaction," meaning a general emotional and physical reaction of the heart and circulatory system.

But knowing that most physicians probably wouldn't think of it that way, the editors have put "fright" in the index with the notation, "See Psychophysiological disorders." It will probably remain until physicians are accustomed to thinking in the more technical term. Then it will be removed, as has "consumption," the old-fashioned term for tuberculosis.

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